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A N S W E R

TO

H U G H M I L L E R

AND

THEORETIC GEOLOGISTS.

BY

THOMAS A. DAVIES,

AUTHOR OF "COSMOGONY OR MYSTERIES OF CREATION, BEING AN ANALYSIS
OF THE NATURAL FACTS STATED IN THE HEBRAIC ACCOUNT OF CREATION,
SUPPORTED BY THE DEVELOPMENT OF EXISTING
ACTS OF GOD TOWARD MATTER."

NEW YORK:

RUDD & CARLTON, 130 GRAND ST.

MDCCCLX.

Entered, according to Act of Congress, in the year 1860,
By THOMAS A. DAVIES,
in the Clerk's Office of the District Court of the United States for the Southern District of
New York.

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SAVAGE & M<sup>c</sup>CREA, STEREOTYPERS  
13 Chambers Street, N. Y.  
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TO

FRANCIS VINTON, D.D.

I HAVE taken the liberty of dedicating this work to you, not merely for the pleasure it affords me, but in the hope that it may impose on you the duty of shedding the Christian light of knowledge, upon the fossil and its dependencies, which your early education and abilities pre-eminently qualify you to perform.

We have, in former days, stood side by side in the ranks of the soldier, and in the academic hall at West Point; and though now as a private, I sound the alarm against a vast crowd of geologic sappers and miners, who are under the very citadel of our Biblical Christian faith, it belongs to you and to others, to penetrate below their depths with counter-mines of knowledge,

to drive them from their positions, and to change the current of popular education, lest geologic error in faith be stereotyped upon the growing mind of the world, by dint of oft assertion, and little contradiction.

I am your friend

and servant,

THOMAS A. DAVIES.

NEW YORK, *January*, 1860.

TO THE READER.

THE overflowing tide of popular opinion which novelty excites, has met with no sensible abatement, but still continues to rise higher and higher, as the geologists proclaim to the world that they hold the scientific key which unlocks the deep vaults of Nature enclosing the mysteries of Creation.

Assertion, to some minds, is proof; especially if that mind be stimulated with the hope that such assertion is true. To the world at large, which takes it on trust, it is wisdom, until shown by information to be folly. When, therefore, the geologist asserts to his audiences of listeners that he can see with his telescope of science what it is well known no man has ever yet seen—the *manner* and *time*, how and when, forms of matter

were introduced upon this planet—there are numbers who assume that assertion to be true; for they themselves do not understand *why* the geologist can not see what he himself may imagine he does see.

The object of this work is, to show that he has no more seen the beginning than he has seen the end; that what he declares to be SCIENCE, is simply a matter of FAITH; that this FAITH is inferior to the BIBLICAL CHRISTIAN FAITH, which the geologists are endeavoring to overthrow and annihilate, if not in all its parts, at least in its foundation and material element. The weight of the argument, as may be judged by the title, is directed against the productions of the late HUGH MILLER, which bear upon the overthrow of the biblical Christian faith. He was the first geologist to lead off in an open and avowed attempt to eliminate portions of the Bible, and to substitute therefor his geologic version of the "Footprints of the Creator;" apparently never reflecting that the one is in language which all men may read, while the other is in hieroglyphics which *no man can* with certainty decipher.

The most unpleasant portion of the task is the answering him who can not answer in return, if we do

him injustice. It is not, however, the man of whom we shall speak; but of the vital principles which live on every page of his last publication, and which have spread through the land as though printed on the wings of light. For the purpose of showing the false grounds of his position, and those of geologists generally, we endeavor to explain the origin and nature of the *fossil*; and, to this end, we divide all existing fossils on earth into those which were pre-Adamite and those which are post-Adamite.

There is no diversity of opinion as to the origin of all fossils admitted to be post-Adamite. While the geologists claim that all pre-Adamite fossils were preceded by plant or animal life, and have been the subjects of development, the biblical Christians and strict constructionists claim that all pre-Adamite fossils were made by creative fiats. Thus, there are two classes of pre-Adamite fossils—the geologic or development pre-Adamite fossils, and the Mosaic or fiat pre-Adamite fossils.

We then proceed to demonstrate, on analogical reasoning, respecting *admitted* creative fiats, that the Mosaic pre-Adamite fossils were in like manner the sub-

jects of *fiat law*, and hence *were not preceded by vegetable and animal life*. Geologists, on the contrary, although they admit creative fiats to most existences, deny it to the fossils; and hence their faith, based upon the assertion that geologic pre-Adamite fossils, which **are** the same in fact as the Mosaic pre-Adamite fossils, *were preceded by vegetable and animal life, and were not the subjects of fiat law*.

As the result of this, the simple ground of difference between the two resolves itself into a FAITH as to the origin of the pre-Adamite fossils, whether they were or were not the subjects of fiat law. In other words, the biblical Christian faith assumes that they *were* the subjects of fiat law, and hence that the rocks and fossils were made under the law of creative fiats; while the geologic faith denies this position. If the former be true, geology falls back among the sciences, and must be known only as mineralogy.

In discussing this subject, it has been our intention to treat it in such a manner as to *draw the attention of Christians to the importance of the principles involved*. If at times we use language which any geologist might consider personal or implicative in any way, it will

be an assumption on his part, as no personalities are either intended or expressed. Upon this subject, we have no friends to serve or enemies to conquer. The subject alone, irrespective of persons, but necessarily not of supporters, is the ground of animadversion. The disease to be cured is of a peculiar character, and we think, from wrong treatment, has become deep-seated, requiring for its eradication energetic means, and possibly extraordinary remedies.

If murmurs or complaints were to go forth from any source, it might well be from those who consider themselves aggrieved by a trespass upon the sacred and time-honored Christian faith, the inalienable property of every true believer.

THE AUTHOR.

NEW YORK, *January*, 1860.

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ANSWER TO HUGH MILLER.

CHAPTER I.

THE FALSE AND THE TRUE RECORDS.

Or what moment is it to me whether Geology be true or false in her deductions, so long as I believe the truth of Scripture? What matters it to me how long and how loudly Geology may call to her adherents, so long as I bend my steady course onward in the path of my own true faith? What have I to do with the study of Geology, to know her strange and wondrous story of a creation, while I believe in Moses and the prophets?

From such quiet repose and confidence in the Christian world has sprung up, under the garb of science, the most powerful, plausible, insinuating, and attractive enemy to the Biblical Christian faith which has presented itself, as a rival, in the horizon of Christianity since its establishment. To deny the fact, shows either a want of understanding as to the points of con-

flict between the two, or an erroneous estimate as to the extent of the geologic belief.

Yet the real conflict has scarcely begun. For the geologists as a body, either through error or some other cause which we need not name, have avowed to the world that their doctrines were coincident with Scripture, and hence were only to be studied, understood, and embraced as a consequence. The result of such assertions and certificates, emanating from men of standing and worldly reputation—men whose names ring through the halls of literature, science, and art—has been, the acceptance of these dogmas on their *personal reputation and standing*, rather than upon any *knowledge* that they possess themselves upon the subject, and could communicate to others. For it is but necessary to ask one question, and the proof of this assertion is patent. Will any honest geologist declare that he *knows* that animal or vegetable life *did* precede any one of his pre-Adamite fossils? Will he assert that God *could not* make a fossil, as he made man and other things, by fiat law? Hence there is no *proof*, and the world are simply assuming *their* belief, not *facts*, when they embrace the succession theory of geology.

This lure, falsely called science, has brought forth

crowds from the fireside, the workshop, the forum, and the pulpit, to listen to the seductive, plausible, and bewitching stories told only on the assertion of the geologist. The Christian, at times startled by the apparent conflicts with his faith, was soothed into acquiescence by the assertion of the geologist that "there was no occasion for alarm," as "the Mosaic account did not fix the antiquity of our globe"—"we are exactly on Mosaic and Biblical ground." Expressions and statements like these have been displayed from the ramparts of the geologist during a period of nigh half a century.

During that time they have, under these soothing guises, erected a vast pile of fortifications throughout the world, supposed by many, who have aided in the work, to be the surrounding Scripture with safeguards and additional supports. Some have even pointed to it from the pulpit, as the growing evidences of Christianity, and as being the proud fabric reared upon the imperishable foundation of the Christian faith.

But, alas! the scene has changed. The head and front—the general of the geologic, literary, and scientific men of the world—Hugh Miller, has unmasked the geologic batteries, and by one well-adjusted publication, poured a broadside of deadly mis-

siles against the Bible and the Christian faith. We have waited patiently in the hope that more moderate geologists would disown the deed, but we have waited in vain. Nor do we think waiting will bring about a denial. His positions may be regarded as the exponent of the geologic faith in the main conflicts with Scripture, respecting the *manner* and *time* required in making this world; which manner and time are essential elements in our Biblical Christian faith, and are asserted and reasserted, in plain and undeniable language throughout the Scriptures, to be by *creative fiats* as to *manner*, and *six days* as to *time*. While the geologist admits the Biblical *manner* in most things, and hence admits the *truth of fiat law*, he denies it in others, so as to make his main conflict as to *time utterly irreconcilable with Bible truth*.

We say his ground is untenable if he admits creative fiats at all; for, to prove the exception, he must show that the Creator *could not* make a fossil by fiat law; and if he shows that, he must still show that his fossil *was pre-Adamite*. We say that, the admission of fiat law in any department in Nature, binds him to the rule till he can show grounds for an exception. Not only will he be inexcusable by the assumption, but he must prove the grounds by some well-put and unde-

niable proof. Hence we throw heavy responsibility on intelligent men, who know this necessity in all fairness of argument, and the brethren should not deem him worthy the name of a Christian, under such circumstances, who doggedly points to his fossil god and says, "*prove my falsity !*"

Hugh Miller was not alone in his views respecting the general bearings which geology has upon Scripture. Nor for the purposes of an answer to the point of fallacy in the groundwork of geologic faith, is it essential to specify wherein his views differ from others. These details are of no account, if their main postulate be wrong. Nor has Mr. Miller's works or arguments ever turned to the source of error; and while all is assumed, that assumption in his case, as in that of others, becomes broad folly in a logical point of view, because he endeavors to demonstrate what he can not prove, and has never even enunciated his proposition.

He seemed rather to have been forced by the views which his supposed science, and the quasi-scientific men (on this point) of his creed advanced, to take ground against Scripture rather than find that ground

in the Scripture context. This goes to prove what few will fail to admit, that by mental education and training, Hugh Miller was a devout Christian before geology made its deep mark upon him. Nor will we go so far as to say that he was not a Christian when he was a geologist. But this much we will say, that if he practised in *his* religion upon the views of the Christian faith, made coincident with the requirements of geology, then he was not a Biblical Christian.

He has taken the correct view of the conflict, and could say no more than elaborate upon the "Two Records," and "Two Theologies." But so skillfully are these subjects handled, that though he lays down the elements of each record and each theology as *entirely different* respecting the parts discussed, and as utterly inconsistent with each other, yet, to suit his purposes, calls them in gross the same. His arguments and reasonings are of that inconsistent character in this respect, that they can not be reconciled to any other supposition, than that he in truth believed, and so intended to argue, that the geologist could well understand him as reading his creed, while the Biblical Christian would believe he was equally handling his, and tying them both together with a philological knot, or "cutting that knot" at his pleasure, as he says he does in one

part of his "Testimony of the Rocks," he is Christian or anti-Christian.

So far as the Scriptural Christian faith is claimed by geologists to be coincident with the geologic faith, just so far do the two conflict with each other, and just so far the Christian faith is false in an important element, and hence false as a unit, if the geologic be true. Our speciality in this work is to show the conflicts of the two — show wherein the geologic is false — and show that, as we have but one true God, so we have but one true record — one true theology — and but one true Biblical Christian faith as a whole.

Geology is little less in respect to its theories, than a huge Bible with the sedimentary rocks as pages, where the geologist, by a rule only followed by himself (because it is not logical), reads and translates whatever he sees, or pretends to see, to his congregations of listeners; and, in this respect, bears a strong analogy to the co-ordinate branch of religion in the Mormon faith. There is, we think, a wide difference, however, between reading these pages correctly, and reading them hypothetically. *Facts* can be read truly, but not fancies; tangible truths are positive; unknown actions, at times when there were no analogies existing, can not be assumed as scientific proofs.

The truths of geology, which are the truths of other sciences, meet with universal acceptance, and the *one* single assumption which gives geology a distinctive name as a science, is scarce ever referred to, and is probably entirely unknown to many who receive its dogmas, and believe it to be the new-born science of the nineteenth century. There is no concealing the truth, that from this cause the world has taken a geologic stampede, each one vieing with his neighbor in his effort to commit to print the innumerable natural facts which are to be found on any hillside, and in every valley. Each amateur is stimulated to search, in the hope of making his name immortal on the geologic page. He thus has cracked nodules, hammered limestones, split coal, and clay slates, till a fossil kingdom has been developed, equalling, almost, in graphic outline, the crystalline kingdom in mineralogy.

This is well, as to the *facts* developed, and is a noble addition to that science which has been taught in our universities and other institutions of learning long ago, under the name of mineralogy. If the fossil is a stone (and if it is not a stone it is not a fossil), then it still belongs to mineralogy, as the name indicates. The pre-Adamite fossil is generally an aggregation of crystals, and crystals of the same description aggre-

gate to make the same kind of rock, but in different forms. The crystal makes the mountain, makes the flagstone, the boulder, the stone of all shapes, and the pre-Adamite fossil also. The Creator made the first, the intermediate, and the last. He makes them now, and the great question to put to the geologist is, could he make them as stated by the Mosaic account in six days?

For, if the fossils in the rocks claimed by geologists to be pre-Adamite were made with the previous existence of animal or vegetable life, then the Mosaic account is untrue, and particularly the fourth commandment, which positively asserts that, *the earth and all that therein is* was made in *six days*. It will be observed that the fossils are not excepted.

The question then results, are *all* the fossils in the rocks and upon the earth the result of the pre-existence of vegetable or animal matter to have given them form in stone? The next important question respecting the accuracy of the Mosaic statement is, were the fossils now found by geologists in the deep rocks there at the time Moses wrote the assertion, that the earth and all that therein is was made in six days? If this is admitted, then it follows they were either made on the third day, when the "Earth" or "Dry

Land" was made (which included all the present rock-formations mainly in their present shape), or were made out of order in the fourth, fifth, or sixth days, in a way, and by miraculous means, only known to the Creator, and in violation of all known natural laws. For if this present organization was made, as stated by Moses, in successive days, each day's work being necessary for that of the next, and the work as stated was done by classes and kingdoms, and each kingdom was wholly introduced at the time therein stated, it would be a violation of that law of introduction to make part of a kingdom on one day and part on the next, particularly when an additional miracle would have to be performed, as in the placement of fossils in the solid rocks after they were once made.

Many, and probably all, the geologists of note claim that this earth has been many millions of years in the course of preparation to arrive at the finish which it now has, and which finish is dated to be the Mosaic account, or the introduction of man upon this planet. It matters little to us which geologic theory be the nearest correct as to the length of time this earth has been forming; our special object is to show that no one of them and the Mosaic account harmonize relative to the creation, and, if they do not harmonize, to

show why they do not. In a former work were given at full length the physical difficulties of the geologic formations. They would be condensed and repeated in this, if the limits of the work would allow.

If, then, the geologist proves beyond all doubt his assumption that every fossil form found in the deep rocks was preceded by an animal or a vegetable, he has done much to establish a succession in the rock-formations above the granite; and hence the certain proof that the world was not made in six days, as stated in the fourth commandment and other portions of the Bible. But if, on a closer examination of the subject, he shall find that the fossil kingdom is a separate and distinct kingdom, and is in its existence governed by every law, natural and revealed, which governs every other kingdom, and its introduction into existence was governed by the same laws which governed the introduction of each and all the other kingdoms, then he must conclude, as a necessity, that the first forms of this kingdom were of fiat origin—made without a parent or pattern, in like manner as were the first crystals, the first fishes, the first plants, the first vegetables, or the first animals. And although this proposition may confound the mind at first, be assured that it would be far more difficult to convince any one

that the first of mankind were made in completed forms, if that individual had not been *taught* the idea in his catechism, or been *educated* to the thought. The mind of man, like that of a child, is unprepared to adopt a new idea till he is educated to receive it.

Let the question be put to such a child or man, who has never been informed upon the subject, "Whence sprang and how were the first of mankind made?" and his answer would probably be the same as if he were asked, "Where did the law of petrification or fossilization first manifest itself? or whence sprang the heads of the fossil kingdom?" In either case, without education in the reasons which mankind give and receive as grounds for their conclusions, the same answer would undoubtedly be given. But if you should then tell him that every kingdom known upon earth sprang into existence, by the fiat of the Creator, in completed forms, and those forms are continued, not in identity, but by laws which reproduce them in kind; and you also tell him that this rule is universal except as to one kingdom, and *that* the fossil kingdom; and then if you go one step further with him respecting this latter, and tell him that the fossil kingdom is governed by all the laws of reproduction which govern the others; that fossils, like plants, can be raised in any

quantity, like animals—be made in as perfected forms; and that these fossils have separate existences from the plants or animals after which they pattern by petrification, and that they are the natural parents of the fossil; and then tell him, in this connection, that the first plant was made without a parent, the first animal was made without a parent, the first crystal was made without a parent; that the first rock of any kind, which now daily re-forms, was made without a parent,—he would naturally ask, “Why could not the fossil be made without a parent also? Is there any difficulty in the way; and is the assertion to the contrary sufficient ground for abandoning the Bible, which declares that ‘the earth and all that therein is’ was made in six days?” In truth, many, and all those whom we answer, admit the making within the Mosaic six days of the archetype forms of the vegetable and animal kingdoms, but exclude that of portions of the mineral kingdom.

No ground has been shown as yet to induce the belief that the Creator has made an exception in the *fiat law*. And, in all sound logic, there should first be a *sufficient reason* assigned why such a course was necessary in order to give color to the proposition, especially as there was no more intricacy in making all the ele-

ments of the mineral kingdom by fiat, the fossil included, than there was in making the vegetable, the animal, light, water and air, metals, and their compounds and crystals. We shall refer to these principles hereafter, in their connection with geologic admissions respecting the establishment and manifestation of fiat law.

A record may be true and it may be false at the same time, though not upon the same point. It may be true in itself, and the falsest deductions drawn from it by a false reading. Thus, with the geologic imprint, the apparent signs may indicate the origin of these forms to be either by growth or of fiat origin. But, in the nature of things, these signs may be read either way, as the faith of the reader is geologic or Mosaic.

Now there is a wide difference between *positive language in plain terms* and inferences drawn from past acts in the deep recesses of time. Any careful review of the causes which have brought entities, now the subjects of reproduction, into existence, must be admitted by every truthful mind as shrouded in mystery. It matters little what the character of the entity is, or by what strange law it is bound to others. We pass all such appearances by, as bald to a proof of its advent on earth. The record, then, which comes

from these archetype entities is to be read uniformly, if read at all. We must read it by one alphabet and by one language. Then, may we not assert that the geologist reads on a wrong basis, when he claims that all lines of existences which now reproduce themselves in type were the subjects of fiat law *except one*, and that his pre-Adamite fossil.

CHAPTER II.

GEOLOGIC TESTIMONY.

THE testimony which is summoned by geologists in support of their view of a creation, is worthy of notice in passing. There is, probably, no cloak which has covered so many errors in the world as that of "testimony." A witness is summoned into court, or voluntarily presents himself before the public to give his testimony. If he goes into court, he is first sworn "in the presence of Almighty God, to tell the *truth*, the *whole truth*, and nothing *but* the *truth*." The tacit oath of the geologist should be the same when he professes to give his testimony upon the hidden things which he has unfolded, as going to prove the state of the earth at any period of time.

In all ordinary cases of every-day life, a man's testimony upon any subject is valuable, just in proportion to his knowledge and honesty. His honesty is, however, of no account, if his information is defective.

And if he should endeavor to testify to facts which, in the nature of things, he could know nothing about, he would risk his reputation as a man worthy of being believed. But if he should state, as a positive fact that which every hearer would know not to be true, he would not only loose his reputation as a man, but would loose his liberty also.

Suppose a case should occur, in which it became necessary to collect certain zoological or botanical specimens for scientific investigation, and, agreeable to instructions, the required collection was finally asserted to have been made; the person intrusted to perform the duty was, by some unexpected combination of circumstances, called upon to testify to the owner, as to what he had collected, and to describe minutely the collection. He enters upon the task, describes fluently and elaborately all the parts of each animal—the nerves, tendons, muscles, flesh, bones, &c., till the animal stands panting in life before him, and he almost feels the hot breath from his lungs, so faithfully and life-like are all the minute points of his intricate frame and the motions of his body recounted and animadverted upon.

The interest and wonder excited in the hearers' mind is increased, when the animals daily and hourly

habits are rehearsed — how he ate, drank, rested, and rose again — what foes he encountered, what battles he won over his enemies, or where he retreated for safety secure from the voracity of his superiors; every action in life drawn as by an eye-witness, and testified to with an earnestness and apparent truthfulness, as though it was *positive knowledge*.

Every specimen said to be collected was in like manner described, and drawings of them delineated, showing every part in perfection; and presenting the plant, also, in such flowering nature, that the dewdrop was seen resting in its freshness, or waving in the gentle breeze, and burnished by the noonday sun.

The list is at last ended, the catalogue completed, when the eager possessor, delighted with his supposed prizes, is ushered into the presence of the huge animals, when to his amazement, what lies before him!

Quantities of unshapely stones, and he quickly turns upon his collector and demands an explanation. The man is amazed at being questioned as to “where is your megatherium? your dinotherium? your elephant? your rhinoceros?” and so on. “There they are,” replies the still more surprised individual, stepping around among the queer-looking rocks, as he points out the fragmentary stones which represent

each animal. "But do you call these *animals*?" continues the possessor of the collection. "To be sure, if they are not the things themselves they are their representatives," replies the collector. "But I want the *things themselves*, sirrah! I did not ask you for these petrifications, of which no one can tell whether they have had the remotest connection with the animals of which you speak. It is a gross cheat, a deception, sir. I will not have them; take them away."—"My dear sir, don't be in such a passion," replies the collector; "I thought you a geologist, and if you had been, they would have been the same as the animals themselves."—"Out with your geology, I want the animals, not a cheat." And so the interview ends.

Now this may seem extravagant with an old geologist, whose line of truth he himself adopts, and speaks as truth. But to the world, who have themselves to form an opinion on this point by evidence, the forestalling that opinion by calling things by names which do not even indicate as much as the kingdom to which they belong, is a species of injustice to the uneducated, that should not be tolerated in an enlightened community. In commerce a man would find close quarters who would do less morally than this. In truth, from the language used by geologists generally, in

speaking of their *cabinet of animals*, one would suppose they had a managerie in full breath.

There is a public wrong either on the one side or on the other, when of two sets of existences, the one is complete, full of life, and called by the same names as another set of existences, having no life, and of a totally different composition — no one quality in the one corresponding with any quality of the other. There is something wrong, we say, either in conclusion or in inference, in using the one name to denote the other, or vice versa. A stone or mineral, it seems rational to believe, can not be an animal, or a plant as such, while neither of these, in like manner, can be a mineral. What follows as a necessity? that the nomenclature of the one class or the other is wrong — that to call a stone an animal, or an animal a stone is a deception; whether intentional or not on the part of those using the term, is of no consequence as to the fact. If unintentional, then we must have the charity to believe, that those using the terms had not fully understood that they were, in this way, blending two widely differing kingdoms into one, or worse than that — insisting that two kingdoms, having no elements in common, are one and the same thing.

If the manure causes the wheat to grow which would not grow otherwise than by its aid, then call the wheat manure, and insist that it is such, and you nauseate a delicate friend. Go a step further back, and tell him that the animal is the same thing as that which he produces, and all philological science is lost, and names usually given to well-known things are of little consequence.

Now if the geologist could tell what the seed of the fossil form is, he could easily show what corresponds to the manure that will produce it; or if he could describe and make visible the hidden and unknown seed which produces any crystalline form, the material to compose it can be produced at once from synthetic chemistry.

There is a *secret vitality*, mysterious and unknown to man, in *every kingdom in nature*, which, when rightly deposited with its other parent, wants only the material of which it will form, to cause it to grow to maturity. This secret principle is one parent, and whatever is produced requires it, before natural action will take place, to reproduce the form. For the component parts of man, animal, plant, or crystal, can each be combined and placed in a vessel, in the exact proportion in which they occur in the completed living

and acting forms, yet no man, animal, plant, or crystal will be made without their secret vitalities.

There is a *secret*, beyond the knowledge of man, required to make these elements combine and act together to produce the whole. And until the geologist is able to show that that secret *does not* as well occur in the formation of the fossil-mineral as in the formation of the crystal, we must infer that the fossils belong to an *independent kingdom in Nature*, have parents, like natural forms in other kingdoms, and only require proper material to develop their variety of forms. By parent, as here used, must be understood the *vitality* which causes the matter to aggregate into the form expressed by the Divine will in such vitality. Nor should the ordinary seed of plants be regarded as more than external evidences to man that they enclose, and thus make available for use, the secret vitality which they contain. From evidences well known to every botanist, such vitality must be present in the earth, in some varieties of plants at least, without the external coating of the ordinary seed taken from the living plant.

Hence, the fossil, which is a *growing form* and can be produced in any numbers, is a separate result, and an independent crystalline form from the animal matter,

which co-operated with the petrifying vitality and produced the fossil form. Nor is the *true animal* one parent of the fossil; for the animal *in life* is the *true animal*, while the animal form in the *absence of life* is one parent of the fossil form, and which co-operates with the petrifying vitality necessary to produce it. If, then, it be *denied* that the dead animal or plant contains the parent, and no secret vitality of the fossil exists which will produce it, then why does it grow? The answer involves us in the same difficulty in which we find ourselves when we deny vitality as the primary cause in any of the other kingdoms of nature. At least, he who denies it may undertake the proof of such denial; for our present purposes the rule, and not the exception, will be followed — *that all growing forms in Nature start in a secret vitality, which attracts matter congenial to such vitality, for the production of forms in the kingdom to which it belongs.*

The reason why this is so, will not be explained here; but if it should be, no more would be arrived at than the stated fact, as the nearest approach that can be made to first causes from the visible phenomena of Nature. To undertake to prove that *all forms in Nature start in a vitality belonging to each particular kingdom* would be impossible as a strict scientific proof; but if it be

not so, why is a plant starting from a seed, always a plant, and not a man, a horse, a crystal, a rhinoceros, or a fossil-mineral? It must be regarded rather in the light of a *natural axiom*, than as a proposition requiring proof.

To understand this *controlling idea* fully, will be one step onward in making easy of apprehension the various divisions into kingdoms, which will be made in this work, in order to illustrate the origin, growth, and permanency of the mysterious fossil-mineral kingdom, and show that the ground on which we object to a nomenclature identical with another kingdom, totally different in every particular except in form, is injustice to the seeker after truth, and is and has been the forestaller of independent opinions upon the subjects thus misnamed and misrepresented.

Thus much for the nomenclature of the science of geology, as testimony in its favor for universal acceptance as truth — nomenclature which has arisen, it is believed, with those who have pursued a *line of truth* with such impetuosity and speed, that all other collateral truths have been passed by unheeded, and apparently, from the honesty and earnestness of its advocates, unobserved.

Now let us look at the testimony of geologists, as

bearing upon a subject which must in a great measure depend for acceptance upon their individual relations. They can not be accused of dissimulation, or want of honesty or good faith; but while they have been and are pursuing *one single* and detached line of truth — not according to their estimates, but truth in fact, so far as the facts which they develop are facts — they neglect the infinite other lines of truth which run parallel and lie alongside this very line of truth, which, if considered in connection with the isolated facts which are stated and held up to view, would most essentially change the conclusions of those who hear and see but the *one* geologic line in vibration.

A witness may be summoned into court, and the testimony which he gives be every word of it true. He may state every fact clearly, distinctly, and plainly, going so far into detail, that the transaction about which he is testifying makes a landscape, into which he dots all the makeweights of a line of truth, which he wishes, for some reason best known to himself, to establish. Mayhap the criminal on trial is a bad man, and known or suspected to be such by the witness, and in his view the ends of justice require that he should be convicted. But he goes on with his testimony, coloring it, as he proceeds, unintentionally

against the criminal — neglects to tell, if you please, what he thinks of no consequence to show, his innocence, because, with a certain bias in his mind, he really thinks it of no moment, and he leaves the stand honestly believing that “he has told the truth,” “the whole truth,” “and nothing but the truth,” and has thus convicted the criminal; while, if he had narrated that which he considered of no moment, as a point of *law*, it would have acquitted him.

A more dangerous witness than this, still, is one who, not knowing the whole truth, thinks he knows it, and testifies stoutly and confidently to what he does know. What he knows, if only part of a transaction, may be contradicted flatly by what he does not know, and from such testimony comes only error, false conclusions, and fatal results, doing violence to everything like justice.

A more dangerous witness still than either, is he who testifies to conclusions drawn from facts partially seen by himself, when to draw those conclusions, he is forced to exercise his fancy in restoring those portions of the facts which he has not seen, either to acquit or condemn the criminal. It requires but little knowledge of human nature to know what would be the fate of the poor fellow, if he be the enemy, or the lucky one

if he be the friend of the witness. And such is poor human nature, not the intent or fault of the witness.

Then, too, a witness may have a *cast of mind* on which certain parts of a transaction may make a stronger impression than a certain other class of facts, and when he is called upon to give testimony, he will remember the one set easier than he does the other, and his relation will bend to that side with which he is most intimately connected, or most remotely interested. He may be, as in the case cited before, honest in intention, but fail of illustrating the "whole truth," from the habit of remembering one set of ideas, and exercising the mind with them, to the ultimate exclusion of others equally important but neglected.

These unfortunate results are aggravated in each instance related, if the witness has naturally an imaginative mind, and it becomes strongly wrought upon by a favorite theory, or fired with apparent truths, culled from a line of truth equally apparent. Then everything is seen over the shoulder of this fancy, and those points which are makeweights of the right stripe, are noticed, handled, magnified, and described, while all other things, highly important to seekers after truth, are passed by unnoticed, as though they did not exist. And such may, and unquestionably

has become the habit of mind in many writers, relative to the illustration of geology, that an honest purpose may believe it is speaking the "truth," and the "whole truth," when it is only relating that which squares with a theory, or a given line of truth.

That geologic writers speak the truth, is, we presume, true; but that they tell the "whole truth," or relate all which bears upon the just and intelligent understanding of the merits of their theories, is what they would not themselves assert to be the fact. Nor could more be expected. They are advocating for their own ends a certain hypothesis or theory of a creation, and they drop themselves modestly into their "rut" of truth, and leave the advocates of another hypothesis to oust them from their security, and establish an adverse mode of creation.

Their "rut of truth" may lead to the primitive creation, but it is quite doubtful whether, by travelling therein so carefully, their occupants will be able to dispense much light upon other collateral and more important lines of existences.

It is doubtful, too, whether the disciples of this theory, made so by pleasant fancy sketches, drawn in an agreeable way, have ever cast their minds back to the "beginning" of that "rut," to see who travelled

there when these truths began. Who made the first mark, and how it was made in this long line of accumulated travel. And if it be admitted that it had a beginning, when and where did that beginning begin? Were there many beginnings, or was there but one beginning, and did that one beginning have many beginnings within it?

These are questions to which the testimony of geologists have made the fossil mineral, at various times, give various answers. We purpose to call upon this mysterious stranger, and by putting questions in a different form, make his answers take quite another shape, and prove from the evidence which he himself shall give, that he is not an exception in truth to any other thing which has had a beginning, that he is not the miserable outcast of Almighty rule which the geologist would fain make him; but that he is entitled to the same rank, the same care, the same importance in the world as anything else, and like them, could have been the subject of miracle in first form.

And if we fail not in the attempt, we will show that the fossil mineral, as it came from the hand of God, without a parent, and without a seed, testifies in its very existence the purity of its origin. So also the first of the race of man, of the entire vegetable and ani-

mal kingdom, should be allowed by all Christian cosmogonists, to have been made by creative fiat, which called perfect forms into existence without a previous earthly form in type. The geologist would fain prostitute the handwriting of the Creator, and make the fossil existence "life out of death." He denies, then, even to the fossil mineral, what is granted to its elements, the original touch to give them form—the moulding hand of the Creator.

It is sound philosophy to assume, that in the making of the first forms, there were no special favorites, except the necessity to accomplish all in due time and in a given order, and if it was possible for the Creator to make one form without its parent or seed, it was possible for him to make another, and if he made all such save one, we must have *decided and unequivocal proof* that he made that an exception to the rule, before we can simply assume it as the groundwork of a demoralizing and unsound faith.

CHAPTER III.

KINGDOMS IN LINES OF EXISTENCES.

FOR the purposes of our illustration, we name all *distinct classes* of things, be they small or great, *kingdoms*; and the separate members, which are reproduced, or which reproduce each other consecutively, making up these kingdoms, *lines of existences*. Thus the vegetable kingdom is made up of certain lines of existences which *reproduce themselves*; while if any one of these lines can be petrified, or fossilized, showing that it can be reproduced in a fossil state as often as the vegetable can be grown, we call those fossils a *line of existence in the fossil kingdom*.

It will be seen, then, that each line of existence has its parent on the one side, and its vitality, the parent, on the other, which, placed under favorable circumstances, will produce the required result—a step in the line. It matters not, either, whether a form in nature be reproduced by the action of natural law

or not, there is a something corresponding with this vitality which is lost under certain changes, and would indicate that *all forms are accompanied, during their intact condition, by their vitality*, so that it becomes an active principle from the birth to the dissolution of the form.

This vitality is *divisible* in some forms, and *indivisible* in others, and it is believed, though we do not assert it as a settled principle, that every line of existence has a *different vitality*, because they produce different results, are made active by different means, and are extinguished by different causes. By being extinguished is meant, changing their character as perfected wholes in their completed results, so as no longer to retain their distinctive characters.

Some minerals are changed from their perfect state by the application of heat, cold, water, and sometimes the atmosphere alone. There are various agents that will destroy the mineral crystal, as also the aggregation of them. In the case of carbonate of lime when heated, the carbonic acid, one element of its perfect formation, escapes, its vitality as a crystal of carbonate of lime is lost, and a residuum is left possessing another vitality, but not that of the crystal before death.

The reader must excuse this rather dry lecture (possibly as interesting as the other portions), since it

is introduced to show, that the law which governs the *fossil mineral in its introduction, growth, and decay* (if it be subjected to decaying processes), *follows in every respect that of any other crystalline or aggregated mineral mass.*

And here, let it be remembered, the academic divisions and names given to formations on the earth, have nothing to do with them as things bearing separate existences, and forming after a given pattern, so that the eye can distinguish to what line in the kingdom it belongs. As far, then, as our purposes are concerned, we call all mineral, except the vegetables, animals, water, gases, light, and other subtile.

This classification is not that given by mineralogists, for they describe a mineral to be “any substance in nature not organized by vitality, and having a homogeneous structure.”*

Now we do not wish to gainsay this definition, but as high authority, and as a generally-received classification, we would be doing injustice to our main postulate, not to examine it, and see on what grounds it is based. What makes the spar, the gem, or the mineral ore aggregate sooner than a like principle secreting the fossil? or aggregating the conglomerate into a rock substance? Dry sand will not make a conglom-

* Dana.

erate without the hardening principle — its vitality — can be induced to operate.

We frequently loose sight of generalizations in specialities, and we can not see why vitality, as a principle, can not be allowed to every completed existence, when that intact principle can be destroyed by any extraneous cause. It is the great principle which elucidates the fossil, and hence, we anticipate, will meet with disfavor in certain quarters. Though if it be not a principle equally applicable to all things, we are unable to compass the reason with the light which we now possess.

If it be contended, that all vitality in the three kingdoms, usually assumed as the three great divisions in Nature (the mineral, vegetable, and animal), were the same in each, this supposition could be overthrown, because it could be demonstrated by experiment, that what would destroy vitality in one line of existence would not destroy it in another, and hence, the *same* vitality did not control the existence of the two.

By referring to the various lines in the vegetable and animal kingdoms, as compared with each other, it is a well-known fact, that causes which will extinguish the vital action in one, will not affect it in another of the same kingdom. Like causes acting on like

aggregated compounds, should produce like results; and as the chemical compounds may be assumed to be near the same in any two analogous lines in the vegetable or animal kingdoms, it follows, that if the results are not alike in dissolution, it must be attributable to the only remaining active element, vitality.

Thus we progress in gaining a generalizing view of the uniformity in the *manner* of constructing entities in archetypes, and in accordance with analogical fiat law, the mind naturally reverts to those forms in nature, which, by education, we have been taught, started as subjects of this law, and were brought forth complete from the hand of the Creator. As a ground of sound reasoning upon fiat law, is there a distinction between one line of existence in nature and another, and is there a sound reason why the one should not be bound by the same rule as the other; or why one kingdom should be the exception to that law, while its neighbor, which accompanies it, and on which it depends for birth and existence, is the admitted subject of the law?

But we hear the geologist say, "do we not see the fossil now grow from the wreck of animal and vegetable forms, in fragmentary masses, as well as those which are entire?" We say on this point, so far as

principle goes, a part of a rock can be the subject of fiat law as well as a mountain range, for both are completed entities, and have their special vitalities. It would be, however, unsound to say that fragmentary members of a completed, living entity, existing under a vitality in nature as a separate line, were alike the subjects of fiat law, except they be in place as portions to compose the completed archetype. And whether you assume the fragmentary fossil as an element of the entire mineral kingdom, or as a separate line, and an archetype form, it matters not, as affecting its title of reproduction under the almost universally-admitted creative fiat law.

When the mind can fully understand what an independent line of existence is, there will be no difficulty in separating the life of the fossil from the life of the animal and plant, which are mere elements in nature, which operate to prepare the parent of the fossil on the one side.

On the same ground of reasoning, and with equal truth, might the geologist argue a succession in *animals' forms* (which he denies), because from the very *same debris* which makes the fossil in the mineral kingdom spring, under other circumstances (being other parents), revolting animal forms. Now, it is as

difficult for us to account for the springing into life of this class of things, or any one of them, as it is to explain why, under other circumstances, the fossil springs from the same matter.

The geologists admit the class of animals evolved from animal matter when vitality has departed, as being subjects of fiat law; while they deny the mineral form which comes from the same matter under different circumstances as bound to the law of succession.

We think this illustration is sound and a good analogy; and if it should be unsatisfactory to some, they can draw many from other sources. And, as a resulting consequence, we must assert our conviction to be, that the fossil, either fragmentary or complete, is a *principle* in nature, having as much individuality in itself, and entitled to all the privileges, subject to all the contingencies, and bound to take rank with the remainder of God's works, made objects of reverence by the Christian in the belief of their creative fiat origin.

It has been somewhat a matter of wonder with us why geologists have not endeavored to show, by some plausible argument, the origin of light, air, water, vegetables or animals, by some process of the creative energy other than that of fiat law—nay, even more than

this, the numerous primordial elements of matter, and the metallic masses and ores in the secret places of the earth. To a candid mind, two prominent reasons suggest themselves:—

FIRST — That there is no hypothesis which can cover the mystery, except they refer them to fiat origin; and —

SECOND — If they are handled at all, they fall as of necessity into this rut, and become dead-weights against their faith.

The variety of fossils found, their sequence in order of arrangement (if that be true as stated by geologists), are of that class of mysteries only known to the Creator. Why he has seen fit to make a variety of rocks, or of animals, or of plants, or of heavenly bodies, are questions which any man can ask, but no man can answer. And he who thinks and asserts that there are no mysteries concealed from human research *is not* a believer in the Christian faith; for that principle is asserted and reasserted throughout the Bible.

We have yet to learn the difference between an archetype form representing the head of a line of existence, and a reproduction after the pattern in kind. Who moulded the first, and who the last? Is the first less perfect than the last? and, if so, on what ground

is the supposition based? In either of the two which we have named, is the *naturally* reproduced air or water different from that which was liquefied into existence by the Almighty fiat? Would it, then, be sound reasoning for those who admit the Creator's ability, in this enlightened age of equilibrated science and divine revelation, or the fact of the introduction in Nature of any completed organisms to assert, that because air and water now form from existing elements, that hence all air and water upon this planet has formed in like manner? that *no air or water* was formed at first by the fiat of the Creator, *because* we now know of their forming from pre-existing elements, and by virtue of those affinities which he has implanted in them, and which he yet maintains.

Admitting, then, the introduction of air and water by a creative fiat, and also by reproductive ability, how are we to determine the archetype particles from the reproduced ones? This the geologist must admit is a puzzling question and defies his skill. He, as well as those who disagree with him on other points, will undoubtedly coincide on the following — that *abstractly* or positively there is *no means* of determining the question.

Now, suppose we classify every particle of air in

every portion of the earth, and call it the *air kingdom*; and all the water in like manner, and call it the *water kingdom*—all the quartz-crystals in the world, and call that the *quartz-crystal kingdom*; and all the fossils in the earth, and call that the *fossil kingdom*. We then ask the chemist, the mineralogist, and the geologist, to come forward and point out, in his respective department, which of each kingdom was a *first*, and which a *reproduced* formation; or tell, from the inspection of the *things themselves in that condition*, whether there were among the whole mass of each an archetype particle of water, of air—a quartz-crystal, or a mineral fossil.

The chemist commences his discourse, and says, “How can you expect me to point out the difference between one particle of water and another—one made yesterday, or to-day, or thousands of years ago? they are all alike—there is no way of telling; the question borders on absurdity. There are what we term impurities in water, by which I can tell whether it be salt water or fresh—whether it be the water of the Pacific, Atlantic, Mediterranean, the Black sea, or the Dead sea, or any other distinctive known body of water—whether it be rain-water, spring-water, or river-water (which is rain-water after it has taken up more impurities); but I can not tell one particle of

pure water from another, or where or at what time it was made. Though my experience teaches that water is constantly decomposed and re-formed, and the strong probabilities are, that among these particles which are here collected, there is a large proportion which were combined in the primitive creation. But if you ask my *scientific opinion* as to *when* they were made, and which was made *first*, and which *last*, I must answer, that, without positive knowledge as to the fact, I can give no opinion based on exact science. If I see the water condensed from the two gases which compose it, my knowledge is perfect, and my answer would be scientific; but if I have the particle presented to me independently of that knowledge, I am at a loss to tell more than that all analogical reasoning induces me to believe that some particles of water that I see have been made by the fiat of the Creator, while others have been reproduced."

"Suppose, Mr. Chemist, you should find a drop of water in a quartz-crystal, enclosed in the granite rock at a very considerable depth in its solidity, when would you say that that water was formed? Would you not be able to say positively that *that drop of water* was made in the primitive creation?"

Chemist.—"No, I could not; for all rocks and crys-

tals are more or less porous, and such a phenomenon, if found, might by possibility be produced by condensation of gases or of aqueous vapor: but the probabilities would be decidedly in favor of the supposition that it was from the *primitive fountain*, and my reasons for that conclusion are that the granite rock must have been among the first solid things moulded on this planet; and, admitting that to be so, there were no natural causes that *could* decompose pure water — all these causes are in the order of creation, of subsequent date to the making of the granites by any hypothesis of a creation as yet advanced and advocated. Nor could there have been hydrogen and oxygen evolved from any known form in nature to have made the reproduced water, until after the granite was made; and hence I should infer, conclusively, that the water found in quartz-crystal was *made* in place; that it was so made simultaneously with the crystal, or made before, and, if made before, was a first form or archetype. I can conceive of no way by which it can be determined, in the air or water kingdoms you have supposed, which particles of each are primitive, and which are reproductions. But if these particles were *imperishable bodies*, then one fact at least could be determined *positively* — that some of them

were *fiat forms* ; and if you admit the interference of a Creator *at all* in their making, *some of them are fiat forms*, while others are *reproduced* ones."

Geologist (interrupting). — "Then I suppose you say that all lines of existences, even those in our fossil kingdom, were made as we find them in the rocks, and without the previous existence of the plant or animal which they so faithfully represent."

Chem. — "No, I have not *said* so, Mr. Geologist, whatever I may *think* on the subject ; but the form of your question awakens a new thought in my mind : and now allow me, as you have taken up your subject a little out of its order, to ask for my own information a few questions.

"Can you tell me which of the fossil forms we have here collected were made first, and which last ?"

Geol. — "That is hardly a fair question, when these fossils are jumbled together in this way ; but let me separate them, and then I can tell you."

Chem. — "Never mind ; take the simplest and most common — any of the fossil zoophytes which run throughout the geologic range from the first to the last geologic formation."

Geol. — "We class the rocks according to the fossils which they contain, and judge of the age of the fossil

by the position of the rocks in the earth; and as the fossil you have selected is found in all of them, I scarce know how to answer your question."

Chem. "What I mean to be understood by this question is, can you tell the *geologic age* of the *animal* by the fossil which represents it?"

Geol. "Oh yes, I can tell the geologic age of every fossil before me with perfect ease, excepting those which are common to all the rock formations, being some lower orders of zoophytes."

Chem. "What may I understand by geologic age?"

Geol. "The term is rather an indefinite one, but all the limit which can be given to it *positively* is, that one geologic age precedes another."

"How do you determine this fact?" inquires the chemist.

"Easily," replies the geologist, "by the rocks of different kinds which lie one upon another, and which have been upheaved by some convulsion of nature, and show the layers of sedimentary rock, the one over the other."

"What do you mean by layers of rock?" says the chemist.

Geol. "You seem to be truly ignorant of our science, Mr. Chemist, and from the questions you ask, I shall

have to commence your education in this subject at the beginning."

Chem. "This is the point I am aiming at; that which follows the '*beginning*' I may be as able to judge as you; but what I wish to ascertain is, what evidence you possess in the geologic science respecting a '*beginning*,' and which corresponds, in accuracy of reasoning, to that which I have just given respecting air and water."

Geol. "I will commence by telling you, that this earth was once a ball of fire, or molten matter, which cooled, and the outward crust thus made wrinkled up into our mountains, which have been washed by the oceans of waters which you have told us of, and by this friction, and, as you know, chemical action, the detached portions of them have formed a sediment which has hardened into rock of another sort, and so on and so on, till, from the gneiss which you see composing most mountain ranges, and which was the first sedimental rock thus formed, we run up through the mica and talc schists, the clay slates, the grauwacke group of rocks, the silurian limestones, the old red sandstone, the mountain and magnesian limestones, with coal-beds intervening, the new red sandstone, shell, lias, oolite, and chalk limestones, marls, and,

finally, clay, soil, &c. In these various rock formations, commencing with the clay slates upward to the soil, and in it, are found fossils, which go to show, that the animals and plants which they represent flourished upon the earth before these fossils were made; and their being entombed in these rocks, is evidence that the rocks themselves have been made by successive additions by water actions, in the course of which these living forms have been engulfed, and the fossil forms found as the consequence. We are supported in this belief, since all those rocks which contain fossils are being developed now upon the earth, with fossil forms in them, but of a flora and fauna peculiar to this age, while those of the various and previous rock formations referred to, differ somewhat from these.

Chem. "What are the differences to which you refer?"

Geol. "To give you the idea of diversity and variety in fossils found, it will be necessary to tell you in what kind of rocks they occur. To do this, it becomes necessary, also, to tell you that no two great divisions of rock are alike; but geologists have made no other classification of rocks than that which is dependant upon the fossils found in them, and the consequent relative position of one above the other."

Chem. "Then, if I understand you, when you find a rock in one geologic age, which is identical with that formed in another, you refer the making of each to differing epochs of time?"

Geol. "Certainly, for the fossils contained in rocks accompanying each, show, that as the fossils differ in the two sets of rocks, so they must have been made at different times, and the one being over the other proves this fact conclusively."

Chem. "How would it be if the fossils were made by a creative fiat? Would the fact of one rock overlying another be conclusive proof that the under one was made first, and the upper one last?"

Geol. "I think it would be conclusive proof that the under one was made first: but how long first, of course, could not be determined without referring to the fossils, and if the fossils be admitted as made by a creative fiat, then the rocks must also be admitted as made in like manner, but that is absurd."

Chem. "Why absurd?"

Geol. "Because we see these same rocks, at least most of them, forming daily under our eyes, and see animals and plants being fossilized and buried in these accumulating rocks, and we can tell from inspection, how long it takes a few inches of rock to form, and

hence, we say, that those rocks in the earth which correspond with these in composition, must have required a proportionate length of time to form in."

Chem. "What rocks do you now refer to as forming daily?"

Geol. "The limestones, sandstones, and slates. The primary rocks, as they are denominated, do not now re-form, these are the granites and the crystalline limestone or marbles, and a few others, which, from the appearances of heat visible in the construction, are called metamorphic rocks."

Chem. "How many species of minerals can you make on the ground of different crystalline composition?"

Geol. "If you arrange them upon that footing, I presume you must take the mineralogical division, and Dana claims there are five hundred different *species* in the mineral kingdom, and these, with their varieties, are contained within the rock formations of the earth."

Chem. "Then what do you denominate a species of mineral in a geological sense?"

Geol. "We do not pay much attention to species; but I suppose we should make the same division as the mineralogists do, and, if you please, naturalists too, in the vegetable and animal kingdoms. The peculiarities of the internal and external structure

would govern a species, and it may not be uninformative to you, to quote Dana upon this point. He says: 'the true foundation of a species in mineralogy, must be derived from crystalization, as the crystalizing force is *fundamental* in its nature and origin, and it is now generally admitted, that *identity of crystalline form and structure* is evidence of identity of species. This principle unites certain distinct chemical compounds into the same species, for example: a silicate of magnesia, and a silicate of iron crystallizing alike, constitute but one species in mineralogy, though chemically so different."

Chem. "Can you tell me to what geologic age these five hundred species of minerals belong, or to which is each referred as to its introduction upon this earth?"

Geol. "I do not understand you. Do you mean to ask when the first carbonate of lime, for example, was made and introduced?"

Chem. "Not particularly that, *but the entire range of species*, for they are found, as a general thing, indiscriminately scattered throughout the rock formations."

Geol. "Well, you know our theory is, that all things were once a fused mass—and this earth's substance was a ball of fluid melted matter, which commenced to cool, and the surface did cool and formed a solid

foundation, which was granite rock, and then waters were placed upon this granite, and the wearing processes of the water made a sediment, which settled at the bottoms of these waters, and hardened, in the course of time, into other rock, and so on and so on, till all the rocks of the earth, which are called sedimentary, were made. This, we judge, was so, from the fact that we find, as I have said before, fossils in these rock, which must be the representations of previous living forms of plants and animals."

Chem. "There is a difficulty in your first supposition, which, as a chemist, I should pronounce fatal. If this earth, and its present component parts, was supposed to be in an igneous state of fluidity at first, how is it that we find now, that *all substances* have a different point of fusibility, and that granite rock has the *highest of all*. So that, if the granite was in fusion, *every other known substance was utterly destroyed*—and when it cooled, these substances, being in a gaseous state, could not return, nor any one of them, into the solid mass of the granite rock. And as we do find many of them there, can we account for their being there by any such supposition?"

Geol. "I confess to you, that there are difficulties like these which have caused very many of us to aban-

don the fusion theory, and the metals are the most stubborn things to get on with on this hypothesis. I know that they are mostly found in the solidity of the granite rock, and, too, that they are all destroyed at a temperature that will melt it. But I do not see how the science can be maintained, if it be not done on this as a start; for if it be admitted that the granite rock was made by the *fiat of the Creator*, then all things *which are contained within its solidity must be abandoned to the same rule.*"

Chem. "Is there any reasonable conjecture by which the granite rocks have been formed like the sedimentary rocks, by a long progressive course of evolving, or development?"

Geol. "I am not aware of any, having the shadow of support, which does not trace its validity, either to an igneous fluidity in mass and cooling, or to a creative fiat."

Chem. "Do you acknowledge, in your theories, that the Creator made the granite rocks as they now exist?"

Geol. "Most certainly we do, and more than that, we think that He was able to make them in either way, whichever was agreeable to him."

Chem. "What grounds have you, then, for judging

that the primitive granites, and metamorphic rocks, are of igneous origin?"

Geol. "From appearances which plainly show that they have once been in fusion."

Chem. "Are you enabled to say *distinctly*, how the *first granites*, or what you denominate *metamorphic rocks*, looked when they came from the hand of the Creator, by whichever process they were made, by fusion, or by a fiat?"

Geol. "We do not admit them to be made by a fiat, because their appearance shows they have had an igneous origin."

Chem. "But suppose that it pleased the Creator to make them by a fiat, and yet make them having the appearance of an igneous origin?"

Geol. "This is absurd, because it is a deception to man, and why should the Creator deceive?"

Chem. "It might be called a deception by some, but it would not be so called by me, for I know that these *appearances are such as occur* in after-states by the application of heat, and, therefore, there is a good reason why, if the Creator *did not* intend to deceive, they were made as they are. For if they were not so made in archetypes, the application of heat to them would bring about *entirely new appearances*, and the

results obtained would not be recognised as being the same things."

Geol. "This is just what I say, that if fire *now* will produce these appearances, *fire must have been used* in their *first* making. There we agree precisely, and these are the *foundation principles* of our geologic science. To express it in a more general form, we say, that *whatever we see now produced as a completed result, the same mode of action was at first, always has, and always will be*, used to bring about like results."

Chem. "We do agree, to a certain extent, but not in the length and breadth of your proposition. I will modify your generalization this much — 'whatever we now see produced as a completed result, the same mode of action always has, and always will be, used to bring about like results;' leaving out the words '*was at first*,' and insignificant as these last three words are, I regard them as the stumbling block of your science."

Geol. "Is it not good reasoning, and sound logical philosophy, to assert, that what we now see accomplished in nature has always been so done?"

Chem. "This may do as a plausible, broad proposition to present to the mind of a multitude, but will scarce answer as between us; though, I suppose, you mean to state substantially, what you have just stated

relative to like results following each other from like causes in nature."

Geol. "I mean to be close, though I may be a little popular. You have stated my meaning."

Chem. "Then, if this be your intention, and you admit the proposition, that like results in nature always flow from like causes, when do you begin with your lines of existences, as I may call them, where any one of these results is *one step* in the chain?"

Geol. "At the beginning, of course, the first result of the kind arrived at, or brought into existence."

Chem. "Now let me ask you to generalize, once more, what are the causes which conspire to produce such results in nature?"

Geol. "They are as numerous as the various results produced; and there may be said to be *one set of causes* to produce the numerous *steps* in any *one line* of existence; that is, the same causes always produce the same kind of pine, wherever it may grow. Another set of causes produces the same kind of oak, wherever it is grown. Another set of causes produces a given kind of cereal. Another set of causes produces a fossil *fern* leaf. Another set of causes produces a fossil *fish of a given kind*. Another set of causes produces one of the varieties of quartz-crystals, and so on, every

given form in nature following some previous one of a like kind, each being a type in the line of existence to which they belong, as the letters a, b, c, or d, are each types of a repeated alphabet in metal — repeated, possibly, one thousand or many thousand times in a font of type.”

Chem. “The same causes producing like results, to what cause do you attribute the first result of each particular kind of thing?”

Geol. “As for the answer to this question, we have no means of proving it by science, and, in truth, it must be simply a matter of faith, for who can tell what causes made the first thing of its kind? Although we well know, by experience and scientific inductive reasoning, that like causes now produce like results, yet what was the first cause no one can, of course, tell, though they may conjecture.”

Chem. “Then, at best, it would not be true science, which would pretend to tell with accuracy what the *first cause* was which produced the first of the kind of any given result?”

Geol. “Most certainly not; the first cause must for ever be enveloped in profound mystery, though our faith leads us to attribute all first causes to a Creator.”

Chem. “Do you think this rule applies to *every* form

in nature, or, rather, to every line of existence in every kingdom?"

Geol. "I do not *know* any *exception* to the rule, in truth, I can not well see how there *can* be an exception."

Chem. "How do you, then, apply that rule to the fossil kingdom, which is the manifestation of the basis of all your conclusions respecting the formation of this earth?"

Geol. "There is no difficulty in that. The cause which produces the fossil now has ever produced it."

Chem. "Is that so? Let us, then, see the cause which produces a fossil form, for example, to-day. Is it not the pre-existence in life of the form itself, and a locality suited for fossilization, which produces the result now?"

Geol. "Most assuredly."

Chem. "Is the fossil form thus completed an independent, distinct form in nature, of different qualities and constitution from the living form?"

Geol. "It is so, no doubt."

Chem. "Then, if you were to make a thousand of them, and lay them down upon the earth in the order of time in which they were made, would not each one be a 'type' in that especial line of existence, as sub-

stantially as though they were living plants or animals? for you can make the fossils as fast as you can raise the plants or breed the animals."

Geol. "We do not find such things in nature, as fossils made by men in the manner referred to."

Chem. "No, I presume not, but you will not deny the thing to be possible?"

Geol. "It is possible, provided the exact causes to make the same fossil were present each time."

Chem. "Then suppose we select some particular plant or animal, which we know and admit is reproduced in type successively, and each time that it was so reproduced, it was fossilized on its death. Would we not have two lines of existences, the one the living and the other the product of the once living, and other causes — the fossil lines. A strong analogy on this point is the tree and the fruit, two independent (when produced) lines, the one growing out of the other; yet who can doubt the Bible to be true, as to the expressed creative fiat causing the tree and seed within itself to spring into existence together? And if we admit any other mode, we pass from fiat law to that of development. The one line, the living existence, we know, or at least admit, *as our faith*, did start in a completed form, and without a parent. Now can you tell me

on what ground you admit the one line to start without a parent, and admit a parent to the fossil line? In other words, you say the fossils, *in all cases*, were preceded by vegetable or animal life, while the first of each animal or vegetable was an archetype, a completed form without a parent."

Geol. "I must, in all candor, say, that there is no proof on that point, and the one is as reasonable, abstractly, as the other. In principle I can, in truth, see no difference; but we readily admit the first, as a matter of faith instilled by education. The second, on the other hand, we regard, and, possibly, also by education, as a secondary form. But while you may induce many to believe the first, there are very few who will believe that the fossil was made without the pre-existence of the forms which they represent."

Chem. "If the fossil were admitted to the same rule of archetype forms which you have laid down; that is, '*the first cause must for ever be enveloped in profound mystery*,' how would this effect the science of geology as it is now understood?"

Geol. "If that be admitted, the whole science falls at once; there would not be a *time-mark left*, if the pre-Adamite fossils in the rocks were made by a fiat; or if they are placed upon the same footing with other

lines of existences, which our faith allows us to consider were introduced in place by a creative fiat. In truth, you never can make people believe such a doctrine."

Chem. "It is as easy to believe that as any other application of fiat law, only educate the public mind that way ; but it takes time. They can readily see and apprehend a simple, physical fact, such as a fossil being made from an animal, and hence, that the animal preceded the fossil ; but it is not so easy for that mind to penetrate to the foundations of our faith, and be able at once to understand the abstractions of chemical science, and demonstrate, logically, the generalization of principles which underlie its structure."

Geol. "Our science is plain, as you say, easy of apprehension, and palpable to the senses of the commonest understanding."

Chem. "And hence, *per se*, as a science, I should conclude there was a fallacy planted in depths so profound, and yet assumed to be so simple. But let us endeavor to ascertain *on what* the whole science, as claimed, is based ; and for that purpose can you tell me the number of elements which make up the science ? I mean by that, the salient points upon which it depends."

Geol. "There being no proof of what existed before the historic age of man, you may say it depends on *appearances*. This is the *sole element in fact*, and that element is subdivided into many classes of appearances. *First*, There is a class of appearances derived from the primitive and metamorphic rocks, which indicate that portions of them have been in a state of fusion, and the entire mass of them have been claimed by geologists, on this account, to have had an igneous origin. Though I will have the candor to say, that there is no *positive* evidence on the face of them of such an origin, and I do not think any geologist should maintain it. *Second*, There is a class of appearances in what we call sedimentary rocks, and they are so denominated from two causes.

"*First*, Their structure, and

"*Second*, Their contents.

"The first is assumed because they are found to contain seams and fissures, and are in layers as a general rule.

"The second, their contents, which are fossil minerals, and are supposed to have succeeded animal and vegetable life, which they represent, and were not made in their places by a creative fiat.

"There are various other minor appearances which

aid to make up the data of the science, but these are the most important."

Chem. "Would the first and second classes of appearances, alone be sufficient to found your present science upon, without the fossil minerals which these rocks contain?"

Geol. "Nothing could be arrived at without the fossil."

Chem. "Then the vitality of your science depends upon *the age* of the fossil. So that if all the so-claimed pre-Adamite fossils in the rocks were made by a creative fiat, and the rocks themselves made in the same way, there would be nothing left of the science of geology. It would then be old-fashioned mineralogy?"

Geol. "Most certainly; but there is not much fear that such a state of things can be made to appear, no sooner than we can *show positively* that animals and plants *did precede* fossils which we find."

Chem. "The whole science of geology, so-called, then, resolves itself into the small compass of a simple matter of FAITH, *that the fossils contained in the pre-Adamite rocks, were preceded in all instances by animal and plant life.*"

Geol. "We can not deny your proposition; but at the same time we hold very strong to *that faith.*"

Chem. "You will find no difficulty in obtaining disciples in a department where science is so cheap and easily obtained, by the mere assumption of the garb. Though a rigorous investigation will show that the entire fabric of such assumption, is *faith* in the mode and manner in which one class of archetypes in nature were introduced in place, and that *faith* is received at the expense of physical difficulties in the laws of nature, quite irreconcilable with *true science*, and a far superior and Christian faith diametrically opposed to it. The mode of introduction of the fossil kingdom into place, must yield to the law of universality allowed to all other kingdoms in nature. How do you classify fossils?"

Geol. "Into two great classes, the pre-Adamite and the post-Adamite fossils; the former being those completed before the sixth Mosaic day, and the latter those which have been made since."

Chem. "There is no difference of opinion respecting post-Adamite fossils; the whole controversy rests on the pre-Adamite field."

Geol. "That is true."

Chem. "How, then, shall we draw the division closer still?"

Geol. "You believe these mere Mosaic pre-Adamite

fossils were made by fiat law; while we think they were preceded by vegetable and animal life, and were made by development."

Chem. "You may, then, divide the pre-Adamite fossils into Mosaic and geologic; and the question of difference of *faith* between us lies in this, that we believe them to have been the subject of *fiat law*, while you believe them to have been the result of *development*?"

Geol. "Exactly; this is the ground. We simply present to the world the facts developed by the fossil kingdom and its dependencies, and state what our individual belief is, leaving others to believe or not, as they choose. You can not blame us for our *faith*, or for the *faith* of others."

Chem. "By no means; nor would we blame the Indian or any heathen for their religious faith, provided they have been so educated, and had no other from which to choose. It is so with the community: if they continue to hear nothing but 'geology,' 'detrital sediments,' 'upheavals,' 'fossils,' and 'fossils,' and 'fossils' again, the dogmas connected with them become stereotyped upon the public mind; and, whether it be error or truth thence evolved, the result is the same practically."

Geol. "You have led me away from the physical

facts upon which we commenced our conversation; and, while I do not object to speak of first causes, there is nothing which can be arrived at by their discussion that will lead to a scientific result: and I therefore would prefer the discussion of the facts, rather than the *faith* connected with their origin."

Chem. "But you forget that in this lies your whole science. The *origin* of your facts is the *whole question*; and, if you did but discuss the facts, then, as I before remarked, your science would be simply mineralogy. But you add to mineralogy a theory of the origin of its children, and pretend to tell the birth and age of each. The circumstances attending the birth of the pre-Adamite fossils are your especial science, which, as you have said before, being self-evident, is simply *faith* without *proof*. If you could demonstrate the *origin* of your *facts*, then you could prove your science; but, until you can do this, *my faith* that one portion of the fossil kingdom (the pre-Adamite) was made by a creative fiat, while all since that have followed a law at that time established and made effective, is as reasonable on the face of it as yours. And if you placed all the kingdoms of creation upon *one basis*, and asserted that each has evolved from some generative cause in the absence of divine revelation and a Creator, your faith

would abstractly be as reasonable as mine. But your trouble lies in the fact that, after following divine revelation in the establishment of all the kingdoms except the fossil kingdom, you branch off at this point, and say this is an exception; and yet you can give no proof of your assertion, while general reasoning must bring you to a different conclusion."

Geol. "Then you have the idea that all the pre-Adamite rocks of the earth were made by a creative fiat, and came from the hand of God as we now find them?"

Chem. "Individually I do, and for this reason: that if I admit any one portion of creation to have been the subject of fiat law, it seems that I violate all analogies if I deny it to another where no proof can be adduced to show a different origin. But that violation of analogies becomes still more flagrant when I admit it to all, and deny it to one, *on no proof whatever.*"

Geol. "Well, all I can say is, that your faith is astonishingly strong, if you can believe that the pre-Adamite rocks were made as they now are by a Divine hand and creative fiat!"

Chem. "You think otherwise; and now let us look at the grounds which separate us on the abstract fact. Is there any more difficulty or intricacy in the making

of any geologic rock, as an archetype, than there is in the making of a man, a tree, or an animal, as such? Each, you must remember, has its peculiar elements, which make up the whole; and if reformed by natural means, these elements again assume their places, to complete the result."

Geol. "Yes, there is, and quite a difference. The rock is made by successive external additions; while each of the others—the tree, the man, or the animal—is produced by another and quite a different mode, adding internally the matter necessary to growth, instead of externally."

Chem. "You must not confound two quite different principles, the one governing the introduction of archetypes, and the other natural laws governing their growth. The two have no possible connection with each other; and their blending together, it strikes me, is the groundwork of the error in your theory. My proposition was this: admitting the geologic rock to have been made like the plant, the animal, or man, by a creative fiat, is there more mystery, difficulty, or intricacy, in the making of the former in archetypes than of the latter?"

Geol. "Taking that view of the case, I can not see much difference; and, if there be any, it is in favor of

the plant, the animal, and man, over the rocks, since each is a higher organism in Nature. The plant is the lowest, the animal the next, and man the highest."

Chem. "Abstract reasoning, then, brings you, as it will undoubtedly every ingenuous mind, to the conclusion that there is more mystery, difficulty, and intricacy, in summoning the mind to acknowledge and admit the making of such archetypes, than those of the rock formations. And while we admit the former very readily, as being our faith grounded on education, many deny the latter, from what seems to me a want of self-education and close, analogical reasoning."

Geol. "You may reason as much as you like, and frame your analogies how you may, you never can make me believe, and I will not speak definitely for others; but I think you will never make geologists believe your postulate that the pre-Adamite rocks came from the hand of the Creator by fiat law substantially as we now find them."

Chem. "This I do not expect; for you must remember that those who teach a dogma, if it be grounded in *faith*, as this is, are the last individuals to stultify themselves. The only mode of curing geology, if it ever is cured, is to kill off the demand for the wonderful stories which it relates of scenes in a past world, exist-

ing only in imagination, and which are educating the world in an unsound, unequibriated, and *false faith* as to the creation of this earth. And now, Mr. Geologist, as we have had a very full conversation, pleasant because moderate, with your permission we will postpone our interview till some future day, when these suggestions, which are but general, will, it is hoped, lead your mind into a true and rigid train of analogical reasoning upon the facts of the science which you advocate; and that you will suppress in it that portion resting entirely on *faith*, rendering ‘unto Cæsar the things that are Cæsar’s.’ But should you yet determine to mingle your *faith* with your science, make one that is worthy of you. Incorporate upon it a religion worthy of such faith, and submit the fabric as such to geologists and their proselytes for acceptance; and Time will tell you whether there is enough in admitting archetypes without parents, or fiat law, to all lines of existences, numbering over three or four hundred thousand, excepting one, and that the fossil mineral, to make your faith imperishable and your so-called science true.”

CHAPTER IV.

THE MOSAIC ACCOUNT OF CREATION.

THIS sublime production asserts, from inferences fairly drawn from its first sentence, that God, having completed the design of creation, commenced its execution by manifesting his *first fiat* upon the *heaven* and the *earth*. From the conclusions which are drawn out of the account itself, heaven, as the original also indicates, is expanse or space; and earth, as we well know, is matter in combination, and in this connection is earth still, but was in a state *without form*, and the place of its future was *void*.

It then becomes a philological question in one sense, as well as a scientific one in another, to resolve what state matter must have been in, which was without form and void. If it was conglomerate at all, it had some form; and where matter is, there certainly is no vacuum or void. The only reasonable answer which can be given is, that matter was *fiated* into existence in its *lowest division*, its *primordial particle state*, which we

well know has no form ; and that that part of heaven, or space, in which the combination was to be made to cause “the dry land” to appear, was void.

Those geologists who have taken a limited view of the nature of the fossil, have seen a wide field of openness “in the beginning,” which has shaped their minds to the conclusion that in this vast territory of their fancy, or at least before what they denominate the Mosaic creation proper, there was room for all geologic changes. As a plausible geologic argument, it may not be out of place ; but when the dead conflict with the fourth commandment must have been before the eyes of at least the theologic portion of them, we scarcely know what to think of their awkward positions respecting the Scriptures. The first three words of our Bible have possibly aided many to adopt such notions, from the fact that they would seem to refer to an indefinite, indescribable something, one road of which led to the Mosaic creation.

The fault, if it be one, is alone attributable to the requirements of our English grammar, which compel the introduction of the particle “the” before *beginning*. The original reads, “In beginning ;” and hence we can read the first sentence of Scripture understandingly thus :—

“In beginning, or commencing, God created the heaven and the earth.”

This narrows the first creative fiat to a point, and shows that God *created* or *fiated* the heaven and the earth into existence, and did not *make* the latter geologically. In this view of the introduction of matter into space, there would seem to be required some explanation of the expression of Moses which immediately follows: *“And the Spirit of God moved upon the face of the waters.”* It would scarcely be becoming for any one to undertake an explanation *why* the Creator saw fit to move upon the face of the waters; though it may be in place to show the condition of what was denominated *waters*, in order to present the natural phenomena enabling him to do so.

Just as the word “earth” is used, as we have seen, to express or denote matter in primordial elements, so “waters” here are used to denote the primordial elements of which they are composed. Water and air, as will be seen, were made from the elements on the second Mosaic day. Moses, who is not supposed to have known much about gases or atmospheres (and hence had not the language to express his inspiration in better terms than he has), nevertheless so far explains them, that the idea is as truly expressed as

though he lived in the nineteenth century. He makes the clear distinction, too, between *creative fiats* and *fiat combinations*. This will not be observed except by the close reader. There are four original principles which make up entities, as far, at best, as this earth is concerned. The first is *space*; the second, *matter*; the third, *animal life*; and the fourth, the *immortal life of man*. From these four original principles all combinations in Nature are made. Hence, with an accuracy only due to revelation, Moses indicates the creation of these four cardinals by the term *created* in the account just where they are introduced, and uses this term nowhere else. When a combination is fiated into existence, the terms are various, such as, "Let there be," "Let sprout forth," "Let bring forth," "Let us make."

Hence, it must be patent to the geologist that the Mosaic creative account is carefully done, whoever may be charged with its authorship; and we think it will require more than the assignment of previous life to the pre-Adamite fossils to overthrow it, especially as they may be bound to the rule of fiat combinations easier than to make them the *single* exception.

Let us now proceed with the explanation of the two important and governing terms of the Mosaic creation, HEAVEN and EARTH. Many writers, in quoting the

first sentence in Scripture, use the *s* in *heaven*, making it plural. We do not find this in the original, either in the first or second chapters, nor in the place referred to in our Bible. It always has been our belief, and that is becoming confirmed every day, that the Scriptures are so equilibrated and balanced in every part, that they furnish upon their own pages definitions of doubtful terms and phrases.

Hence we need not give our own gloss to the term *heaven*, for we can gain its definition from the record itself. The object to be determined, is not what its usual signification was in the original language when applied to other things, but what the thing is here for which the term stands. On a microscopic view of the whole account, *heaven*, in this connection, means *space*, or *expanse*, or *vacuum*. In the fifth day it is measurably explained. "*Fowl that may fly above the earth, in the open firmament of heaven.*"

What is our experience, in a scientific point of view, respecting the wing-bearing principle of the aerial navigators. That the atmosphere, or as here, and in the second day's work expressed to be firmament, is the wing-supporting power, and hence the *firmament*, in which they fly, is *air*. We further know, that air is within the great vacuum, and is *of* it, but yet is not

the thing itself, and hence, that they are separate things, and expressed by different names, the one being *firmament* or *air* within the vacuum — space — or heaven.

Whatever may be the form, nature, or condition of the final blissful abode to which we are going, denominated heaven in other portions of the Scripture, that must of necessity, from the explanations given in revelation, be another "heaven." As is well known, we use the same terms to express quite opposite meanings; and it is the meanings that fix the terms, and not always the terms which fix the meanings. The same name may attach to a variety of individuals, and we must refer to the *surroundings of the man* to explain *who* he is.

Now, in respect to the word EARTH, used in the first chapter of Genesis, and the same term as used in the second, we think they are of widely different meanings, because of the spontaneous explanations in the record itself. It has three meanings, in fact, so far as claimed by the explanations of Moses.

First. Earth without form and void.

Second. Earth, "dry land," "with form."

Third. Earth, this planet organized.

To the want of these meanings, which are to be

drawn from the face of the record itself, must be attributed much of the difficulty which has been felt in making a unit of the Biblical account of creation. For while all chemistry and science have well known that primordial matter must first have been made, in order to compound the various forms in nature, they were not prepared to find *that* matter expressed under the term, *earth without form and void*, the identical state in which it must, of necessity, have been, in order to make entities in the universe according to existing laws of nature.

And when many of these primordial elements were combined on the third Mosaic day, when land and water were arranged together, and earth was in that conglomerate state called "dry land" (which we well know is the first earth in another form, because dry land contains every known primordial particle of matter in combination), there is a harmony and a truthfulness in the spontaneous explanations of the work itself which prove its origin.

In the specification and application of rivers and states, certainly pointing to the first condition of this earth, which commences with the fourth verse of the second chapter, begins the third meaning. The first chapter is the account of the creation of the universe,

while the second goes on relating the condition of the man in the garden of Eden, his fall, and the consequences to mankind of his disobedience.

The account proceeds to state, that after space and matter in primordial elements were created, light was made by a *combination fiat*. We see no grounds for assuming the contrary, and hence, infer that *all* light which is now in the universe, was made at one and the same time, and of the three primordial rays; also all the subtiles directly and indirectly connected with it. It is well known that most matter manifests a different state at night, from that of the day, except light, which is the same at all times.

Hence light could be combined on the same day on which its primordial elements were created, without violation of natural law, while other matter required to lie over till the second day to make its *first cycle* of existence, of *day, evening, night, and morning* complete, and prepared as perfect elements for the fiat combinations of that day.

Thus we conclude that, as all light was made at this time, every ray, joining this earth's *void* with all other points of space, was in place throughout the universe on the instant that light was completed. This stultifies the theories of astronomers, who claim, as proof

that the world has been longer in action than the Biblical chronology calls for, because it would take light millions of years to arrive at the earth from remote stars; travelling at the rate of two hundred thousand miles in a second of time.

The general theory is, that light is not matter, and whether it is or not, is of no moment as to the fact of its creation. For whether it be matter or the manifestation of it, is of little consequence. It is what it is; and was made as we have related.

The first three days, which may be regarded as natural days, were made so by withdrawing the light at night, and making it manifest by day, until the revolutions of the heavenly bodies were established on the fourth day.

The work of the second day consisted in making *pure air* and *pure water* from the gases or primordial elements, oxygen, hydrogen, and nitrogen. It will be observed, as a peculiarity in the account given of this day's work, that it lacks the confirmatory clause of—“*God saw that it was good.*” Its omission here, and its careful attachment to each of the other five days, led to a searching investigation of what this could mean. Every word of the record is so pregnant with meaning, that the failure here, of what we considered the essence

of the narrative, *making for the uses of man*, that it seemed at first a stumbling block, a weakness, or an omission.

After much labor, and the application of principles as to the necessities of the formations of the third day, we found that *every* department in nature, claimed by the account to have been introduced on that day, required *pure air* and *pure water* for their formation, according to chemical synthesis. Hence was found what we suppose is an answer to the peculiarity, and, certainly, it is a true one, if the earth was formed as stated by Moses.

On the succeeding third day, these same waters were not only used in combinations of solid substances, but were gathered together in places to make seas, rivers, &c., and what we call their impurities were then added, and they became "good."

The remainder of the third day's work consisted in making all geology, except that which has been disintegrated and re-formed into other like things since; and establishing the vegetable kingdom. On this day the great reservoirs of *earth without form* were, by the exercise of *fiat law in combination*, placed in position in, and throughout this vast extent, and *dry land appeared to God*, which, being composed of materials

already referred to, was named by the Creator *earth* still, or “dry land.”

Thus were all forms which were to occupy this planet finished, except the animal and man, and the laws which were to regulate their existence, established, yet no motion had been communicated to a single form in nature — all was quiet.

It is argued from analogy, that every heavenly body was, in manner like the earth, moulded in place, and like this planet, too, lay motionless in the first point of their orbits respectively.

The fourth day dawned, and the light, which was as yet unattached to the heavenly bodies, and had no existence except in its fixedness, was mysteriously joined to them, they first having been endowed with the power to emit light, while other heavenly bodies had the quality given them to reflect that light, and hence we have two kinds of heavenly light — *emitted* and *reflected*.

And now the vast machinery of the universe was prepared for motion. The great law of equilibrium in nature was established, and the Creator gave his command — “move on thou rolling orbs, and in your united beauty and harmony establish two luminaries, the greater to rule the day, and the lesser to rule the

night; and be for signs, and for seasons, and for days, and for years; let the stars also obey this command." Movements onward in their orbits, and roundward on their axes followed, and *gravity* was coeval in its birth with *equilibrium* and *motion*.

It is quite a common interpretation to suppose the *sun* and *moon* were made on the fourth Mosaic day. We have never found the fact stated, either in the Bible or in the original, and hence, we must suppose they were not. And if they had been so named, by a little reflection it will be seen, that the "greater luminary," as the sun, does not rule the day, because there is star-light and reflected light, which aid to make up, with the sun-light, the *greater luminary*; while, for a still stronger reason, the *moon* does not rule the night, for there are times when it is not visible at all, as a *lesser luminary*. The *greater luminary* is the combined light of the sun, stars, and reflected light from other heavenly bodies, to produce the sum total of light. And the *lesser luminary* is the same light at night, with lesser intensity, because of the absence of the sun.

The work of the fifth day was in character, by *creative fiat*, and by fiat combinations—the first, the creating of animal life, and the second the making

archetype forms of fishes, aquatic animals, and fowls of the air.

The work of the sixth day consisted, in like manner, of two kinds of fiat introductions — the archetype forms of the remaining animals, cattle and creeping thing, and the crowning act of the creative energy, the *creating of immortal life in man*.

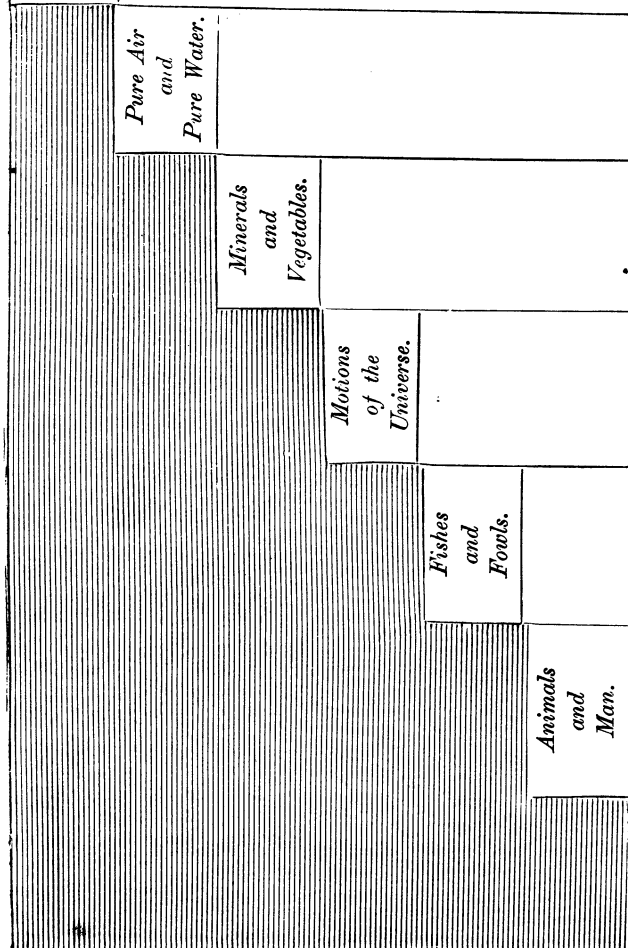
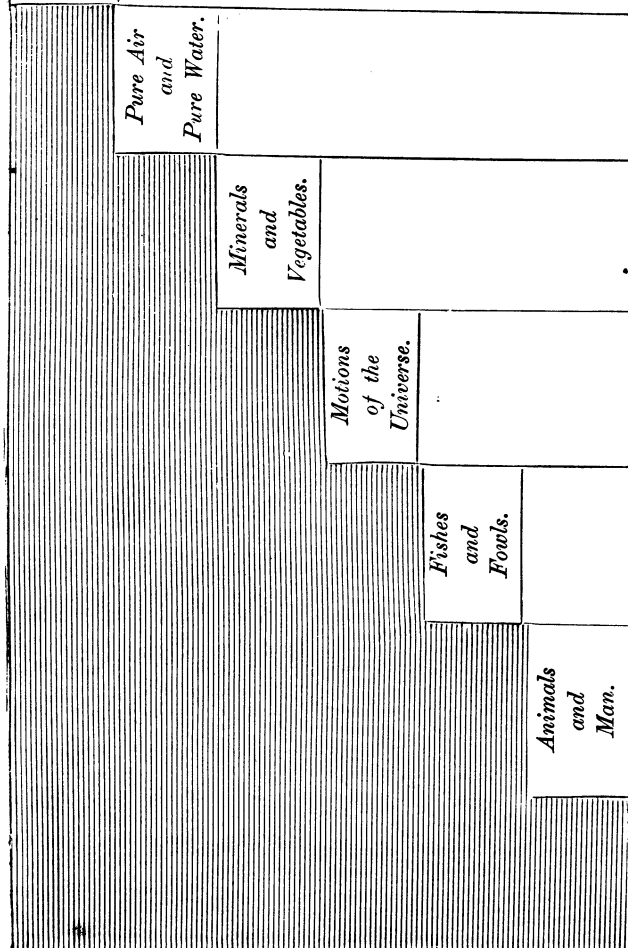
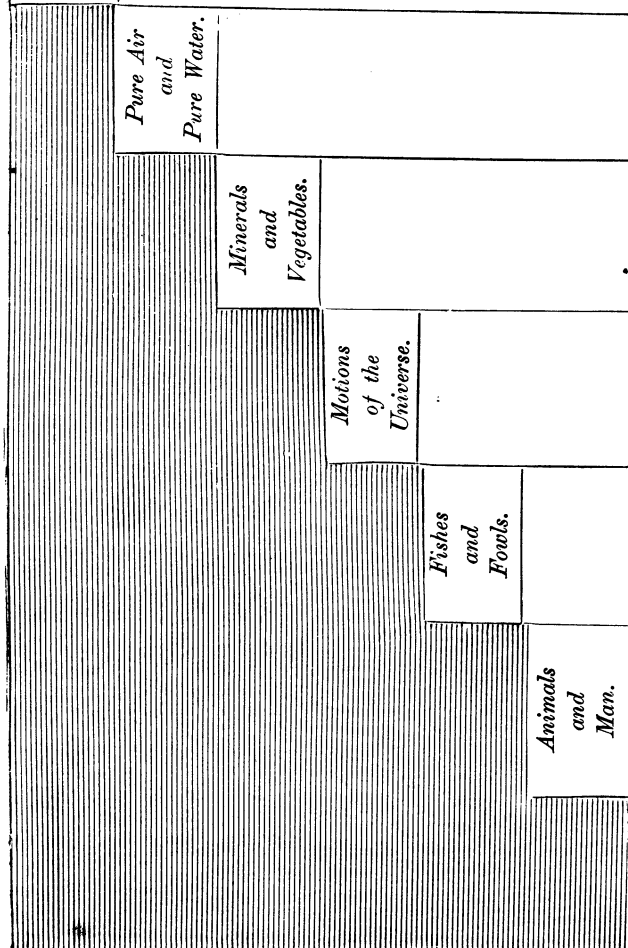
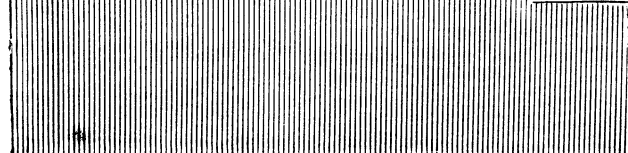
The work was finished on the seventh day, and God ceased to do more, in creating and making; and hence, we infer, that no new creations have been made since that time, which corresponds with all history, and scientific deductions, reasoning from a complete equilibrated system.

The engraving on page 107, is designed to illustrate the six days' work, and the kind of work done in each. From every one, run the parallel shaded lines to the bottom of the page, which may be supposed to represent lines of existences, commencing at their day of creation, and continuing down to the present time. Each may be assumed as any one entity, which is reproduced, or is reproducing itself by natural laws. They begin with space, matter, and light, each of the elements of which have continued the same to the present day, and hence the right lines representing

them. The second day is the minerals and vegetables, which commenced and have continued in lines of reproduction since, and so on, till the entire six days' work started in equilibrium on the seventh day. This has, we think, continued unchanged in the lapse of time since the Mosaic creation, no matter by what chronology that event may be measured as having happened in the past.

And the relations between these various lines, the one with the other, seem to be a demonstration in themselves, that these mutual dependencies have never been changed. Hence the theorist, who grounds his dreams upon such changes, nay, total obliteration of them, time and again, simply to give force to the anti-Biblical Christian faith, that the fossil is a sole exception to fiat law, certainly must, in all honesty, acknowledge that the parallel lines displayed on the next page, are stubborn and wilful witnesses against him. Let him *move* them if he can, or let him arrest their onward course in nature; when he can do either, then let him pronounce the geologic faith founded in an exception, superior to the Biblical Christian faith, founded in the *rule of fiat law*, and upon the unyielding parallel lines which he can now see before him.

THE MOSAIC CREATION.

					<i>Space, Matter, and Light.</i>	
					<i>Pure Air and Pure Water.</i>	
					<i>Minerals and Vegetables.</i>	
					<i>Motions of the Universe.</i>	
					<i>Fishes and Fowls.</i>	
					<i>Animals and Man.</i>	
						SEVENTH DAY.
						SIXTH DAY.
						FIFTH DAY.
						FOURTH DAY.
						THIRD DAY.
						SECOND DAY.
						FIRST DAY.

Present Lines of Existences.

We have thus given a reading of the Mosaic account found inside — not outside of the record. There are numerous comments on this narrative, and we may be wrong in some of our exegeses, but they have been carefully considered, and we think they will stand the test of the severest science, philology, and theology. A more detailed elaboration is given in another work, where fuller explanations of our positions will be found.

In examining the account simply as an hypothesis of a creation, there are two elements which are most prominent to the reader, “time” and “order.” It would be as absurd, regarding the philological truth of the narrative, to call the work done in the sixth day, that which was done in the first, as it would be to make any similar substitution of the work done at one portion of the account, for that recorded to have been done at another — or to change in the slightest degree the order of introduction of the elements as stated therein.

Hence any hypothesis (whether it be true or not) which changes the order of the introduction of any one of these elements, is a new and distinct hypothesis from this, and can have no allegiance to the Mosaic, and if its advocates claim its truth, and urge its recep-

tion, they, in the same breath, declare the truth of the one and the falsity of the other. There is no relief to be obtained from this cardinal principle, and, however much men may have deceived themselves, by allowing their judgments to be warped in entertaining such doctrines, the fault does not lie in the principle itself, but in the carelessness with which such indiscretions are committed touching what the world receive as the inspired word of God.

What, then, do we find to be the "time" of this account? or, is its time named at all? "In beginning" is the first of the time of the work in which "God created the heaven and the earth." Will any one deny, seriously, that this was the beginning? But more than this, had this earth, or the universe of matter, or whatever may be comprehended by the term "earth," been combined as a whole, revolving or stationary, as denoted by this term? Would the prophet *emphatically* declare that which "*had form*" to be *without form*? Where is that man of letters, who, in the carelessness of construction, will unwittingly crowd back upon God, the words of his prophet, and hold that "earth," whatever was meant by it, *had form*.

Let the philologist be candid and true to himself, and, if he will ignore the Mosaic record, then be hold

and say the "earth," at this epoch, *had form*, or what is tantamount to the same thing, that no record of the formation of the earth (meaning this planet) is given, except it be found in the above expression. Whereas, we think the truth of this expression may be acknowledged, in the well-established scientific synthesis, that all matter must have been made at first in primordial particles, and subsequently combined, as is recorded in the second, third, fifth, and sixth days' work.

The entire work of the first day, including the making of combined light, must have been performed simultaneously at the dawn of the first day. Its account could then be read understandingly, if it ran thus: "In beginning, which was at the dawn of the first day, God created the space and matter, in primordial elements, and made light for the universe." In a synthetical point of view what would of necessity follow the introduction of the elements to which we refer, and which were "without form," and the place of their combination was a "void," or a "vacuum," or simply "space?"

In running down this channel of creation, the mind instinctively calls for the "forms" of things, or combinations of those elements already made, which had *no form*. As a stepping-stone to that result, science re-

quires the making complete those substances which are necessary to make subsequent combinations. Hence the necessity of the second day's work, before the completion of all forms of matter in Nature (except animal life and man) which constituted the third day's work, *pure air* and *pure water*. Analytical chemistry develops the fact, as we have before stated, that these are necessary, singly or together, to constitute most forms of matter when aggregated of primordial elements.

The use of these agents in making the "dry land appear," as the account states, is well known to every scientific man, and especially to the synthetical chemist. To whom did these combinations appear? Not to man or to animal, but to God. "Let the dry land appear," was his command, and from all we can discern was directed alone to the primordial elements composing "dry land," to take their places in combination in the various forms of the mineral kingdom.

We invite the special attention of the friends of the theories of Dr. Chalmers, Dr. Pye Smith, and in truth the long line of reconcilists of geologic theories with the Mosaic account, who have taken written ground on that subject, to the fair consideration of the expression which we have just quoted, "Let the dry land appear."

In viewing this matter with candor, it has occurred (as a means of testing the influence of geological discoveries, as they are termed, in warping and distorting the statement of plain facts contained in the Mosaic account) to ask this question: "If the original facts of the fossil minerals had never been discovered, what would be the construction placed upon this expression (we do not speak now of the inferences drawn from these facts, but simply of the facts themselves as entities)? and how would the work of the first three days have been explained?" The difference between the true answers to these questions and those dictated by their theories, will show how far the true philological interpretation of the word has been swayed by the latter suppositions.

The question, then, naturally arises, "*Did the dry land appear for the first time*, as stated by Moses? or had it appeared before to God, as stated by Dr. Chalmers, Dr. Pye Smith, and others?" If it had appeared before, as they state, the Mosaic account is untrue in inference and plain philological construction.

Mr. Hugh Miller gives, in a very condensed form, the theory of Dr. Chalmers, which is more universally adopted by the theological geologists than any other. "It teaches, and teaches truly," he says, "that between

the first act of creation, which evoked out of the previous nothing the *matter* of the heavens and the earth, and the first act of the first day's work recorded in Genesis, periods of vast duration may have intervened ; but further, it insists that the days themselves were but natural days of twenty-four hours each ; and that, ere they began, the earth, though mayhap in the previous period a fair residence of life, had become void and formless ; and the sun, and moon, and stars, though mayhap they had before given light, had been, at least in relation to our planet, temporarily extinguished."

This is Dr. Chalmers's theory in 1814 ; and, as Mr. Miller truly remarks, "the scheme of reconciliation, perfectly adequate in 1814, was proved in 1839 no longer so." And he further adds, in respect to that of Dr. Pye Smith, "*It virtually removes Scripture out of the field.* I must confess, however, that on this and some other accounts, it has failed to satisfy me." Hence the Miller hypothesis, which we will consider hereafter.

This is chopping up Scripture in a way which we most decidedly protest against ; and, in the *mêlé*, it is difficult to tell, from the accounts of the contestants, which receive the severest wounds, the assailants or the assailed.

As the "reconciliations" of the learned divines are

often quoted as valid, let us glance for a moment at the elements of this Mosaic and geologic theology. If the rule of evidence which is applied to an ordinary witness, in a common court of justice, be applied to the great witness who gave to the world his testimony about the creation, we should expect to find in that account, not only *the truth*, but *the whole truth*, and *nothing but the truth*. If, then, we should expect to find *the whole truth* respecting a creation, would that account be partial? Would that account state that light was made on the *first day*, when it had existed chiliads of years, if not an eternity before? Would the witness state that all things were made in six days, when only a portion were so made? In short, would he give an account out of which by no possible means could be wrenched the truth till other and then unborn witnesses should spring up, each in his turn contradicting his neighbor, and each in his turn insisting that the other "*virtually removes Scripture out of the field*"?

Then to which one of these eminent geologists are we to turn for the truth, if there be truth in their interpretation of the elements of rock-formations, upon which to frame an hypothesis of a creation? If we had assigned us the task to show the inconsistencies of each, we fear the reader would tire; *we* certainly should.

But, as the whole question of conflict between geologic theories and Scripture turns upon *one single point*, whatever may be the detailed views of each practitioner in the fossil art, it will not affect the one idea which is common to all.

The coincident element which they claim is, that the *pre-Adamite fossils were all preceded by vegetable and animal life*. They also claim the same with respect to post-Adamite fossils, and in this latter all agree. But if the pre-Adamite fossils were all preceded by vegetable and animal life, there is a clear and distinct conflict in terms between any dogma, which claims this to be true, and the Scriptures. For, on the ground stated before of the witness, if he states the truth, he must likewise state the whole truth; and if he has stated the whole truth, and said nothing of previous creations, he has not told the whole truth; and if he has stated nothing but the truth, he has certainly not told the truth when he reiterates in the fourth commandment that *all things in heaven and earth were made in six days*.

Now, if the fossils, and fossiliferous and other rocks, and their contents, were not made in six days, one or the other of the two statements must of necessity be quite imaginative, to use no harsher term.

This single point of *differing faith*—that is, whether the pre-Adamite fossils *were or were not* preceded by vegetable and animal life—is the only difference between geologic and scriptural ground. While the geologist admits every other line of existence to have started by a creative fiat, in completed form, without parents, he denies that rule to the fossil kingdom. There *may be* grounds for such a supposition, and there *may be* sufficient reasons yet shown to prove the postulate; but we have looked in vain for them, and think none have been or ever can be given. These learned theologians have read the scriptural faith loosely at best, and we are utterly at a loss to imagine whither their acumen in philology could have betaken itself. But if, on the other hand, their *faith* in the pre-Adamite fossils having been preceded by vegetable and animal life was superior to their faith in the statement of Moses that everything in heaven and earth (which includes these fossils) was made in six days, the learned divines had the right and it was their privilege to assert such *faith*; and that, too, with the boldness of a Luther or a Calvin.

While, however, we admit their undoubted right to enjoy their peculiar *faith*, we at the same time most strenuously protest against the implied promulgated

doctrine that flat denials of Christian and received faith are religious coincidences. Nor can more be said for such individuals than to find a charitable excuse for them, based in the broad errors to which the human mind is naturally subject. In some instances, they are the feeble, tremulous Christians who make it a business to attempt to patch up the supposed deficiencies of the Bible by careful attention to what they imagine its weaknesses. We are of opinion that no ordinary attack upon the Word is worth noticing; but when teachers turn traitors to their trusts (whether through error in conclusion or not), and from this cause the pulpit, instead of resounding with the harmonies of revelation, is made to ring with the death-knell of Holy Writ, it should startle into sublime action the dormant energies of those who can raise a voice or wield a pen, to say, "Hold!"

CHAPTER V.

CONFLICTS OF GEOLOGIC FAITH WITH SCIENCE AND THE
SCRIPTURES.

IF, on a full and fair investigation of the grounds upon which the geologic faith rests, it shall be found that there are more natural phenomena which can be satisfied by giving the pre-Adamite fossils the rank which geologists claim for them as against the opposite ground, then it will be left for each individual to say whether he will cast aside the Scriptures, alter the fourth commandment, and change the substance of the Bible thus far, or accept it as it is. It is a fact conceded by all scientific men, that the Mosaic account, if assumed as true, satisfies all the phenomena of Nature, while the geologic faith satisfies but few comparatively; and hence, in a scientific point of view, independent of Divine revelation, is the superior hypothesis: for each hypothesis, judged on this ground, must be referred to this one co-ordinate of truth.

The vast array of difficulties which even a geologist himself finds in closing up any conceivable rational hypothesis, are counted in great numbers, even in any one stratified rock and its contents. But when the rules of settled science assume the task, it is utterly hopeless even to make a starting-point. For the simplest understanding of philosophical principles teaches that you must have an equilibrium in Nature at all times. Hence, if you start your geologic formations in fusion, in solution, or from *one* kind of rock-formation, it will be seen at once that if such a state in Nature was in equilibrium, the next was not; and therefore a new set of natural laws is required to operate it.

But all these points have been fully discussed in another work, and need not be here repeated, except in a condensed form. Nevertheless, we reassert, as we did there assert, that the reasons which have been thus far adduced to support the geologic faith (that all pre-Adamite fossils were preceded by vegetable and animal life) *are false to all equilibrated science* :—

First. Because they require, as necessary to support that faith, the *free action in igneous fluidity* of matter, previous to the making of ALL first forms in Nature, which involves the absence of existing affinities and qualities of matter, and an equal degree of fusibility

of all known substances, which is absurd, since all the metals (except, possibly, platinum) and minerals are destroyed at a temperature which will *melt granite* rock.

Second. They claim, also, as necessary, a succession in forms of matter, which *now have mutual dependencies*, and hence this entire range of dependencies and affinities must have been changed (which may be regarded as an absurdity in an all-wise design), upon the introduction of each successive set of completed forms.

Third. As a result of such claim, the relations between organic and inorganic matter, in the successive geologic ages, must, of necessity, have been changed upon the introduction of a new series, and hence involves, at each, the reorganization of previous natural laws — because the inorganic elements, which now support the organic, are not common to each geologic age in which the organic is claimed to have existed.

Fourth. And further, the existing intimate relations between the mineral kingdom and organic nature, in administering to the wants of the latter, *is made operative* through the combined agency of *all rock-formations* and *the rains*. It is a well-known fact, that all plants, animals, and man, *would cease to exist*, but for this relation, and the means to support it. The manner in

which this relation is kept up is apparent, since the rains percolate the fissures of the rocks, and pick out the mineral matter required ; and differences of levels made by the mountains and irregularities of the surface of the earth, enable these waters, thus burdened for distribution where necessity requires, to follow down their paths, till they at last arrive at the ocean, whence they are again evaporated, and again sent to perform the duty assigned them. Hence, if the pre-Adamite fossils were *preceded by life*, it will become necessary, as a consequence, for those holding that faith, to show by what means that pre-Adamite life was fed and sustained without these sedimentary rocks, and the present order of rock-formations.

Fifth. As to the mode of natural action required at first to compose the so-called sedimentary rocks, three agents are assumed as directly engaged to bring about the result. First, the granite rock proper ; second, chemical agency ; and third, water. *Like causes produce like results.* Hence, the same three causes being engaged, the varied results said to be obtained, require a fundamental change in the laws of nature at the commencement of any new deposit, or widely-differing result ; so that, in completing the scale of the sedimental rocks, the laws of nature, whatever they may

have been, required a fundamental change at each step, till existing laws were established. Science, as received, knows of no such irregularities, and until the geologist shall be able to show, that like causes in nature produce *differing results*, he will fail to get the true men of science to subscribe to his pre-Adamite *fossil faith*.

Sixth. The granite rock is assumed, on the strength of this faith, to have been the original holder and mother of *all substances* which are now found over it, and composing the so-called sedimentary rocks. Hence when, as we do find in these latter rocks, substances which can not be found in the granite, nor anything allied to those therein found — but which, on the contrary, by all known laws, could not claim their parentage in that source — it becomes a matter of grave speculation with the geologist, in order, as is now admitted by many, to reconcile such phenomena with the pre-existence of *life* to the pre-Adamite fossils.

In truth, we might go on citing the contradictions to known laws of nature, till the reader, and certainly the most zealous geologist would be wearied with the list; and while this is so, such is the frame of the human mind for novelty and mystery combined, that

these stories, wrought out entirely in the imagination, are readily assumed as a superior faith to that which requires no contradiction. So that, instead of the geologic faith being founded in data, which prove themselves, they confound the faith upon which they are based, and prove the condition which must have ushered into existence the pre-Adamite fossils, as well as the rocks which contain them. For as far as our limited analogical reasoning goes on such abstractions, of which nothing can, of course, be positively known, if we set aside revealed truth, we can discover no more mystery in making a fossil without a parent, than a crystal, a vegetable, or an animal. But all men are not alike; for some will say—"God would not thus deceive man;" while others would say—"Such a deceptive history of the earth is inconsistent with the divine character." To all such reasoning but little need be said, for God is probably as well informed why he has chosen to make the world as it is, as they are why he did not. The deception, if any, lies with the reader of his natural theology.

The true analogical theologian, or man of science, would be most heartily deceived, however, if he found, as is true, that all archetype forms were admitted to the rank of creative fiat law, and one line of exist-

ence was excepted without a reason. If he found in nature two things lying along side of each other, of the same composition, and only of different forms, the one admitted to the fiat law, and the other rejected, simply on assumption of him who had no grounds to advance to prove the differing origin, the logician, the theologian, the naturalist, and the man of science would be still more heartily deceived.

If he were a geologist, he might not see the deception; but if he was not, and read from nature and Moses, the exception would be an adverse fact which would destroy all analogies.

But leaving this branch of the subject, let us turn to the Mosaic account; and whatever may be the conflicts in the field which we leave, there are not so many, but yet more glaring ones, in that into which we are about to enter. Leaving behind all questions of faith and things which are based upon it, as well as all questions collaterally growing out of "*Which is the true faith?*" as supported by the greatest number of natural phenomena, we will proceed directly to the main points of conflict between the geologic theories of creation and the Mosaic record, elaborated and reiterated by the fourth commandment, which we regard as the basis of truth on which the Bible rests.

If these pillars, of an ancient and heretofore well-received work, are to be supplanted, by what may be termed a superior faith in the pre-existence of life to the pre-Adamite fossils, let us at best, before proceeding to the demolition, ascertain of what kind of metal or material the structure is, which we are about to disintegrate and overthrow; or whether the fair fabric, so beautiful in its architectural proportions now, will be a unit by the substitution proposed.

There is, however, one point about which we hold ourselves responsible — and it is a responsibility which we will never evade — it is this: *that if the pre-Adamite fossils were preceded by vegetable and animal life, then the Mosaic account, the fourth commandment, and the Biblical dependencies upon them, are unworthy of consideration, and are of necessity untrue as the foundation of Biblical and Christian faith.*

This conclusion is not assumed — it can be proven by the conflicts between the two, not only in natural but revealed theology; and hence the broad charge that *faith* based upon life in the pre-Adamite fossils is a *flat denial of the truth of the Scriptures.*

Hence the following charges and specifications against this geologic faith, because of these conflicts and its being founded on an exception to fiat law:—

CHARGE THE FIRST.

A denial of the truth of the Mosaic account of creation, the fourth commandment, and the Scriptural dependencies thereon.

SPECIFICATION FIRST.

In this, that the first chapter of Genesis relates the order in which all things were made, extending to six days' work. Gen. ii, 2, tells that the work was made not only in six days, but finished; that is, no more was performed than was done in those six days. Exodus xx, 11, relates, not only that the creation was performed in *six natural days, such as the children of Israel were enjoying* at that time, but that *all things* in the heaven, earth, and sea, *nothing excepted*, were made in six days. Hence, if the pre-Adamite fossils and the rocks which contain them were not made in those six days (and they could not have been so made if organic life had preceded them), then the Mosaic account, the fourth commandment, and the Scriptural dependencies thereon, are *false* and utterly unworthy of being received as the basis of a true faith.

SPECIFICATION SECOND.

In this, that the geologic faith claims an igneous condition at first of all the matter of this earth as es-

sential to its truth, and as essential as its foundation. If that condition be *essential* as the main element in a creation as stated, any account of a creation, to be true, must state this *beginning as essential*. Hence, the Mosaic account, which gives no such idea either by inference or otherwise, is at fault, and may be set aside as wholly imperfect, if this point of the geologic faith be true.

SPECIFICATION THIRD.

In this, that the geologic faith claims, as essential to the making of existing forms in nature, not only a previous igneous condition of matter, but that this matter should afterward cool to make the "dry land." If this heating and cooling process is *essential* in a creation, then any account which fails to narrate such an essential element is untrue as a complete account, and should be disregarded.

SPECIFICATION FOURTH.

In this, that the geologic faith claims in *pointed terms*, and it is its most *salient* feature, that *earth, air, water*, and *light*, were made, and were active on this planet, myriads of years anterior to the date of the Mosaic narrative; while the Scriptures assert, in unequivocal terms, that *all things* were made in six days. Hence, if

the geologic faith be true, the Scriptures, which state diametrically the reverse, are false — false in directly stated facts, and false as a whole.

SPECIFICATION FIFTH.

In this, that the geologic faith asserts as true, that animal life preceded the present vegetable kingdom on earth; whereas, the Mosaic account states in distinct terms the reverse—that the present vegetable kingdom was made complete two days before animal life was created. Hence, if the geologic faith be true in this respect, the Mosaic account is false in a direct stated fact.

SPECIFICATION SIXTH.

In this, that the geologic faith, claims as essential to its truth, the making of passive forms of the earth from a common mother, the granite rock, by detrital and water-wear, requiring millions of years for the final completion in perfection of those entities. (These passive forms are those which the geologists call fossils, sedimentary rocks, and their dependencies.) The Mosaic account, on the other hand, states that these completed forms came direct from the hand of God within six natural days. Hence, if the geologic faith be true in this respect, the Mosaic account is false

in all the points above enumerated, and false as a whole.

SPECIFICATION SEVENTH.

In this, that the geologic faith claims, as essential to its truth, that many vegetable kingdoms have been created, and have passed away chiliads of years before the Mosaic epoch of creation. The Mosaic narrative, on the other hand, states that the vegetable kingdom was completed on the third creative day. Hence, if the geologic faith is true, the Mosaic statement is false, because the reverse is plainly set forth, and no stratum of construction can make the two harmonize.

SPECIFICATION EIGHTH.

In this, that the geologic faith claims that animal life was begun in a lower order of animals than now exist, and in the deep mazes of the past, millions of years before the date of the Mosaic narrative, and has been gradually introduced by successive completed creations, in completed forms, at distant and different epochs from each other; that these completed creations have been swept away from some unknown and unexplained cause, and successively new creations substituted in lieu thereof, till the present types of animals and man, named in the Mosaic account,

were produced. The latter account, on the other hand, claims no such commencement, no such additions, and no such destructions of life, but on the contrary states, in plain, simple, and terse language, that animal life was instituted on the fifth creative day, and man was made on the sixth. Hence, if the geologic faith be true in these conclusions, the Mosaic account is a huge fabric of deception, false in meaning, false in spirit, and false in directly stated facts.

SPECIFICATION NINTH.

In this, that the geologic faith claims as essential to the truth of its dogmas, that entire creations of plants and animals combined have been made and swept away, again and again, in order to arrange for archetypes of present organisms. Hence, if this was necessary to bring about existing results, it was an essential element in the creation; and the failure of Moses to state it in his account renders it, as a whole, entirely untrue in meaning, and false as a perfect statement.

SPECIFICATION TENTH.

In this, that the geologic faith claims as essential to its truth, that *natural days*, and hence, *diurnal motions* of the heavenly bodies, existed millions of years before

the date of the Mosaic account, and before the recorded introduction stated therein of the archetypes of the existing vegetable and animal kingdoms. The plain and unequivocal statement in Genesis is the reverse; that the vegetable kingdom was made in full fruitfulness and complete, the day before diurnal motions of this earth began, and that the animal kingdom was, in like manner, introduced *after* they began; and hence, if the geologic faith be true, the Mosaic account in this respect is false, because of directly conflicting statements—false because of a conflict in every element respecting the dates and order of introduction on earth of the archetypes of these kingdoms.

SPECIFICATION ELEVENTH.

In this, that the geologic faith claims, as essential to its truth, that millions of Mosaic creative days, or *lights*, were required to fit the earth as it was on the sixth Mosaic day, or *light*. Thus, while the geologic faith claims an *indefinite* and almost an innumerable number of *lights*, the other records there were *six only*. Hence, if the geologic faith be true as to the total time required to make the earth and all on it, the Mosaic is utterly untrue and false, because of a diametrically opposite statement.

SPECIFICATION TWELFTH.

In this, that the geologic faith requires, as essential to its truth, the *controlling element*, that the sun, moon, and stars, evolving their attributes of greater and lesser lights, were in place and *in motion*, not only three days or lights before the fourth Mosaic day, or light, but chiliads, or an indefinite number of days or lights before that date. While the Mosaic account states distinctly and clearly, that on the fourth day "God made two great lights; the greater light to rule the day and the lesser light to rule the night;" and the object of such establishment was declared to be, "*to divide the day from the night, and to be for signs and for seasons, and for days and for years;*" and the plain philological reading is, that here commenced the first days thus established, and this fact, if not stated plainly here, is directly so stated in the fourth commandment. Hence, if the geologic faith be true, in this respect, the Mosaic account is utterly false, and unworthy of consideration, as the conflicting statements are too plain and apparent to need comment.

SPECIFICATION THIRTEENTH.

In this, that the geologic faith requires, for its truth, that rains had fallen during the entire period of the

existence of a pre-Adamite world, in order to evolve the processes of feeding organic forms as they are now carried forward ; whereas, Scripture declares, Genesis ii. 5, that it had not, at the date of the Mosaic account, rained upon the earth. Hence, if the geologic faith be true, the Bible is false, because of a conflict in a direct *stated fact*.

SPECIFICATION FOURTEENTH.

In this, that the geologic faith requires, as its great unit, that creation was accomplished by two modes, that of creative fiat and development ; whereas, the Biblical Christian faith, as a unit, claims creation to have been the result of fiat law. Hence, if the one be true, the other is false.

It is useless further to protract these specifications of conflicts between the geologic faith, and the Mosaic account and Scriptures. We might, however, add such conflicts, extending to every element in the geologic as compared with the Mosaic. Suffice it to say, that as two distinct hypotheses of a creation, *scientifically* viewed, there are no two elements in common, except the introduction of man. And certainly it must have caused a smile to pass over the face of any reconcilist, if he were truly a scientific man, when he would read his own labored argument.

We venture to say, there is not a scientific man in the land, whether he be a geologist or an anti-geologist, who would assert, that any two hypotheses of a creation were the same, when elements essential to the two, were at variance. These elements may have the appearance of being the same in both, or may be claimed as so nearly allied, the one to those of the other, as to hope to make them the same; but all such endeavors can not overcome a direct conflict in the two differing elements.

If, then, there is *one element* in an hypothesis of a creation not found or admissible in another, the *two hypotheses are different as a whole*, and this principle will not be disputed by any man of science. Nor can we understand the idiosyncracies of the intellect, if it be true to itself, which calmly asserts the fact of the possibility of a reconciliation. Consequent upon the geologic faith of *previous life to the pre-Adamite fossils*, as we have seen, are these numerous conflicts with the Mosaic narrative. These conflicts will never be reconciled though they prove the groundwork of their faith. Then, if the geologic faith be the superior faith, on a full investigation of the subject, let the geologists, with the aid of fossil light, reconstruct our present Bible for themselves, and let the Mosaic and Christian Bible

stand as it is. For whatever may be the faith of the unscientific, and those who take "popular geology" for a guide in faith, there will yet be a numerous class, not only among the scientific, but the learned in the land, who would prefer the received Christian faith, based on the present Bible.

The simple difference *in faith* between the two classes will be this, which we have stated in substance before, *the geologist will believe that vegetable and animal life preceded the pre-Adamite fossils*, and hence a rejection of the present Bible (for the Bible must be true as a whole, or false as a whole); and the other class will receive the Bible as it is, and will have faith that God could as well make a *fossil a completed fiat form without a parent*, as any other one line of existence; and hence, that the pre-Adamite fossils were made as they are, without having been preceded by "life."

To those energetic geologists and philologists who wish to persuade themselves into a reconciliation of these two antagonistic faiths, and who, for this purpose, explain the Mosaic creative day as an indefinite period of time, embracing any number of days, nights, mornings, and evenings—we will remark, if they were schoolboys, and proposed in earnest to their teacher, that they could prove the digit one was any other num-

ber, or any number whatever, and any thing, we should think the parallel an apt one. Let them read the establishment of the luminaries in the fourth day, to make days, years, &c., and let such philologists make a new language, if they would wish to convey a new idea from the transcript.

Nor would this simple element of arranging a meaning for the word *day* aid the reconcilist, since upon such a supposition there would be but one element in common between the geologic and Mosaic hypotheses — that of the introduction of *man* upon this planet. This, according to the geologic hypothesis, is the *last* introduction of *distinct creations*, and such is the statement in the Mosaic account. This would simply open out the period for the introduction of each of the successive *classes* of work recorded to have been done in the Mosaic, and would not at all aid in a reconciliation of the introduction of successive, completed, and active *creations* of *combined animal and vegetable life*, and of *air, water, and light*, or any *two* of them. The Mosaic states the successive introduction of — first earth, or matter *without form and void*, then *light*, then *air* and *water*, then *dry land*, then the *vegetable kingdom in seed-bearing*, then motions of heavenly bodies to make *days, years, &c.*, then the *animal kingdom*, then and finally *man*.

It requires no great mental exertion to see that the geologic faith which calls for the reverse of this order of introduction, or relative action, *can not be reconciled* to the Mosaic account. For *combined creations* with every element in action *except man* are claimed, by the geologic faith, not only to have existed, but to have passed away again and again, *before* the Mosaic-recorded creation *began*. And this faith is based upon the supposition that the pre-Adamite fossils were preceded by animal and vegetable life; for these fossils are the only phenomena by which such conclusions are arrived at. It would then seem to be wasting words to show that the conflict between the two hypotheses, whatever may be the geologic as compared with the Mosaic, *if not the latter in exactness*, is wholly irreconcilable, whatever may be the result, and whichever the world may adopt as true or false.

It then would seem evident, that to settle upon a faith respecting a creation (irrespective of revelation and the received faith), it becomes necessary for each hypothesis to prove its grounds, or at least so far, by *analogical reasoning*, as to show a *consistency* in its conclusions. Now, there are other hypotheses of a creation far less assailable, by analogical reasoning, than the present geologic, and yet not the Mosaic. The geo-

logic fails upon its analogies, because it admits that *every* form in nature, except the fossil-mineral form, was created by a fiat and without a parent. This may be well; but when the exception *is made*, those of an opposite faith want the argument to show why the creative exception *was made*, in this particular instance, as a ground for a new faith.

It is, of course, *impossible* for the geologist to prove that the pre-Adamite fossils *were* preceded by either vegetable or animal life, and hence they can *never prove* what they denominate their *science*. And looking at the one line of truth, and not to collaterals, the pre-Adamite fossils may, to the eye, present no more proof of having been made by a creative fiat than the first quartz-crystal, diamond, topaz, or tree or animal, if the latter could have been preserved, like the former, imperishable. And on a fair review of the collaterals, on the supposition that the pre-Adamite fossils *have all* been preceded by vegetable and animal life, there arises a long line of impossibilities, improbabilities, violations of natural laws, diving mountains and dancing uplands, aimless makings and destructions, all teeming with Godly folly (if we call wisdom his present course), weakening reverence in the mind of an analogical reasoner for such a reputed Maker.

We now come to charge the second, made against the geologic faith, as a ground for its rejection and the maintenance of the Biblical Christian faith.

CHARGE THE SECOND.

That while the geologic faith denies the only settled faith in a creation which the civilized and Christian world have adopted, it supplies no consistent and connected hypothesis in lieu thereof.

SPECIFICATION FIRST.

In this, that each geologist has a faith of his own ; and there are as many specifications, or deductions from the assumed main faith of life having preceded the pre-Adamite fossil as there are geologists. Hence, if the assumption be true, every deduction from such truth should be true also, and hence the same. But as all geologists disagree in their deductions from the one assumed truth, so far as their own evidence goes, it proves there must be falsity in the assumed truth.

SPECIFICATION SECOND.

In this, that all hypotheses of a creation, or partial hypotheses given to the world by geologists, are in direct violation of natural laws, requiring states of this earth never known to man, and the changing of natu-

ral laws from time to time in the various ages of their pre-Adamite world.

SPECIFICATION THIRD.

In this, that no geologist has given to the world an hypothesis of a creation which satisfies *every* phenomenon in Nature, and hence can not be the true hypothesis, so far as it is now partially or wholly explained.

In respect to this charge, much might be said ; but for the present, we will only remark that the flat denials of the truth of the Bible by the geologic faith renders it an important point for us to determine, whether there is *any more difficulty* in believing that God made by fiat the pre-Adamite fossils (however strange their forms and locations) than to believe that this earth was once a ball of fire whirling through space—a state only to be dreamed of, and a condition of the earth or heavenly bodies entirely unknown to man by a precedent!—or that the granite rock was the natural mother and the waters the father of all pre-Adamite fossils, metals, and minerals.

So far as our individual credulity can be taxed on this point, we must acknowledge that some pre-Adamite fossils, said to be the representation of animals, may at times confound us ; but we know that God *did make*

the fossil at best, and hence could make by fiat law the archetype without life. But, so far as the ball of fire goes, or granite being the natural mother of all things, we do not know that God *ever made* a like ball of fire by any process, or constituted granite rock the evolving power of material forms, or that he has ever changed his natural laws; and hence we think it is more reasonable and rational to believe that he has made the pre-Adamite fossils as he made all other pre-Adamite forms, without parents, than that he has pursued the extraordinary and unknown course without a precedent, to make the geologic faith true.

CHARGE THE THIRD.

That the geologic faith being untenable, either in science or received Christian faith, its promulgation is vicious in its tendencies, and hurtful to the peace of mind and comfort of mankind.

SPECIFICATION FIRST.

In this, that the geologic faith strikes at the head of Divine revelation and the foundation of Christian faith, with the intended effect to overthrow both; and hence intrenches the presumptive rights of many, robbing them of their dearest and most cherished jewels, endeavoring to turn them to dross, and offering no equivalent in their stead.

SPECIFICATION SECOND.

In this, that the geologic faith guides the minds of the unscientific under the false colors of "science" (because geology can not prove its postulate that pre-Adamite fossils *were* preceded by vegetable and animal life), by telling the *apparent* "truth" only, and not giving the *whole truth*, that each one may judge for himself; thus disturbing faith, without rendering an equivalent or even an approximate substitute, confusing without setting in order, harming without redress, and finally leaving the mind of the seeker after truth in a chaos of violated natural laws, and (from a want possibly of early opportunities of scientific education) totally helpless; and, unable to guide itself through such labyrinths of learning, it trusts its faith upon the reputation mayhap of men of known scientific standing, who certify their conclusions as *science* without a word of *scientific truth* upon which to base their certificate.

We wish to be distinctly understood as to the basis of our remarks respecting geology and geologists. To that geology and those geologists who claim for their *new faith* an independent ground from the Bible and Christian faith, and so publicly avow it, we have nothing to say; for they have as good right to their faith,

right or wrong, as the Christian has to his, until otherwise convinced. We only speak of geology in the abstract as *untrue in science*, and geologic faith as antagonistic to Bible and Christian faith. So that, if there are some who like geology as a speculative study, they have a right to such pursuit, until they claim for it a seat among the *sciences*, which are common property to certain truth-holders, or to be *Christian faith*, the specific right of another class.

Faith in the truth of Scripture (and of necessity that of *Genesis, the fourth commandment, and the writings of Moses*) is the sole property of the believer. So, too, is the peace of mind consequent upon its maintenance, or loss by its disturbance, the sole and rightful property of the possessor. To invade this property by vagaries and falsities, to deny the truth of Scripture through misnamed and baseless science, to derange the peace of mind of those who have faith, by disturbing its foundation with false calumnies, is what in all well-regulated and equilibrated rights between man and man has its well-known and well-defined term.

The slanderer who hurls his well-aimed shaft at the spotless character of a helpless female—inflicting a wound which no power on earth can heal, or restore the lost peace of mind either of the parent or the suf-

ferer—commits an offence which is akin to the harm and wrong done to those who cherish a true faith, by attacks of men of known *reputed true science*, carrying that reputation upon their barbed arrows as entering-wedges for their shafts of *geologic false science*. Nor can their position be any more charitably regarded than that of the slanderer, while they persist in the invasion of those sacred rights of others, until they can prove what they assert is the foundation-stone of their charges against the scriptural faith. When they can show that the pre-Adamite fossils *were* preceded by vegetable and animal life, then scientific men may call “a science,” based upon this fact, *a truthful science*; and its name may carry its own weight with it. But he who calls a *supposition* or an *assumption* like this, a *science* or a *truth*, is doing as much to inflict a wrong upon those who look at that *name* as *truth*, without being able to prove the reverse or even the fact, is in every way dealing with as helpless an individual as the stalwart slanderer does when he attacks powerless innocence.

Let the slanderer prove his charge, and his fellow-men will measurably forgive his indiscretion. Let the geologist prove his postulate of vegetable and animal life preceding the pre-Adamite fossils, and a much

larger apology will be found for him. Every man well knows that no such proof *can* be made; and hence, what is the conclusion, so far as it affects the geologist? Those who have no reputation as scientific and Christian men to lose, may *assert*, may *declare*, may *assume*, may *argue*, that the pre-Adamite fossils were preceded by vegetable and animal life, which *they well know they can not prove*; but to those scientific and Christian men who possibly kneel weekly if not daily before the shrine which their pre-Adamite geology *stultifies, denies*, and if successful *completely overthrows*, they are left to the *choice of faith* in their own hearts: yet not without blame are they left to assert as *science* or *truth* that which they can not prove, or rob and plunder by means of such assertions *that* from those less gifted, which they can not restore in kind, or in any possible way rebuild the fabric which they so ruthlessly destroy.

The earliest offence chastised for at the schoolroom, as most individuals are aware, is the *childish falsehood*. To such an amazing extent is this principle of truth instilled into the minds of the youth, that a misnomer is often the subject of severe chastisement there, and a superior repetition by the parent at home. In truth, it may be said that no one principle receives as much attention, either in the primary education or in the

family circle as that of cultivating a reverence for truth, and calling things by their right names. A false impression may be as easily gained by a false name as by a *long story* told to convey the same idea as a whole. It matters not how the idea is conveyed, whether by signs or language, whether prolix or brief; the *falsity* consists in the wrong impression conveyed.

What, then, may be said of the older children who deal in geologic *assertions* and general *geologic terms* or *nomenclature*? For, so far as the principle of strict truth goes, we can not see that the older, geologic children should be governed by a less stringent rule on this cherished cardinal than the lisping schoolboy. Now, for an illustration, let us suppose that the boy was a geologist, and by dint of his research in a neighboring field to the schoolhouse he had seen in a rock the form of some portion of a fossil, which, from his knowledge of anatomy, he ascertained to be the tooth of the megatherium, and by his acquirements in comparative anatomy (this being the law by which the fossil kingdom is read) he could in his own fancy reconstruct the imaginary animal, if it had or had not lived to his knowledge.

He returns to the school, collects his fellow-pupils around him, and in true geologic language begins to

tell the story of what he has seen in the field a little over the hill, just out of sight. He expatiates upon the enormous size of the animal, his habits of life, his claw-armed toes more than two feet in length, his ponderous skull, and finally finishes the scene by drawing the outlines of a huge monster upon the long side of the house, to the great fright of the young ones, who peep over in the direction of the supposed monster, and shudder lest they should see him rise up over the hill, to devour them in a twinkling.

It is plain to see the hidden power which such a story would have upon such an audience, when the speaker in whom they have confidence was the narrator. The impression upon their minds would be nothing in comparison if the boy had told *the truth*, and *nothing but the truth*. If he had said, as was *true*, that he had found a piece of rock, which had the form of the tooth of the megatherium, but that no other thing was found in that place, and that some people thought that because this stone had been thus found, there once lived on earth an unknown animal which, for want of a better name, was called a megatherium—do you think the little creatures, on such a statement of facts, would have been shy of the spot where the schoolboy geologist had declared the animal *was*?

But what would have been the fate of that poor geologic boy in those days of teaching and instilling of truth, and the communication of it to others, when it should have been announced to the teacher the huge deception which this boy had practised upon the school, frightening half of them to that extent that they were afraid to go to their homes alone, and the remainder that they would not come again without a parental escort? It is plain to tell that he would have been first beautifully "dressed down" by the school-teacher, and on his arrival home would have had the castigation probably repeated, with additions for telling an outrageous falsehood, and also for the harm done to the school in disturbing the peace of mind of the young pupils by false relations of what he claimed as truth.

We know of no rule which would make an exception with the full-grown geologist, when he tells his hearers of oceans, mountains, upheavals, and distortions in nature, and talks of animals and creatures which have existed and passed away, on grounds no less frail than those of the schoolboy.

Geologists, apparently forgetting all philological rules, and dealing in terms at best false in themselves, speak of these assertions as facts, never thinking to

call things by their proper names. They call stones animals, or bones, or living creatures, or anything they choose; and those who do not stop to reflect, like the school-children, assume the fictitious facts stated as truths, because of the confidence they repose in the speaker.

Change the nomenclature of geology and all its *essence* is gone — hence it is plain to see in what its essence consists. Tell the plain, simple, naked truth, and nothing but the truth, and what is known as truth of the formations of the earth, and no one can object to such doctrines, or the conclusions drawn from these data. Let the non-geologist have a description of the stones found, which are claimed as animals, their size, shape, color, composition, location where found, the state in which they are found, and all such particulars, and let the conclusions be fairly drawn by each observer, and then let the whole truth respecting the probable origin of all first or pre-Adamite forms accompany the description. In other words, let the *whole truth be told*, and geology will take that rank which truth will assign it.

It would certainly be superfluous, in all seriousness, for the advocates of the scriptural Christian faith to admit as coincident, or even as approximately so, the

geologic faith respecting the manner, date, and order of introduction of material first forms upon this planet, as a starting point, whereon not only to base a reconciliation, but as an endeavor to prove the great narrated truth heading divine revelation. And although many able minds have not only seriously considered that the two might stand together on the same platform of truth, but have openly avowed the same in labored arguments; nevertheless, we think those positions have been taken by many who have endeavored to shield the scriptures from what they have supposed to be *true science*, instead of examining whether the so-called science itself *was true*.

They have been led insensibly to *assume* the starting point, namely, that the pre-Adamite fossils were an *exception* in introduction of first forms, and were, in all instances, preceded by vegetable and animal life.

This being *assumed as true*, the Bible account necessarily falls, as we have seen, by the numerous conflicts and contradictions in direct stated facts.

We understand the Christian and scriptural faith to be founded upon the general supposition, that the Bible is true in its statements, and especially so in its recorded manner of the introduction of entities, as bearing directly and necessarily upon man's condition

on earth, and as a proof of the power and attributes of the Creator. The statement, then, if true, must be a unit in itself, not only true as a whole, but true in all its statements, as parts of the whole. We need not apply this rule alone to statements in the Bible, but we can refer it to every day experience. If we meet with a man who tells an open falsehood, and we detect him in it, his credit as a man of truth is lost, and no matter what other statements he may make, they will be received with distrust.

Let the world gain the idea that one *positive untruth* is fastened upon the divine word, and the consequence will be, almost universal infidelity. The scriptural and Christian faith *demand*s a belief in the truth of revelation, not only as a whole, but in every recorded fact. It demands that the plain facts stated in scripture should be received as true upon the face of the language used, even in allegory or parable. The stated facts must be true, or possible, whatever may be their direct or indirect application.

So that, if the creation be spoken of as having taken place in six days by Moses in Genesis, and by him again referred to in Exodus, where he not only says that the heaven and the earth were made in *six days*, but all that therein is, we must assume that to be true.

This statement in the fourth commandment has been received by Jew and Gentile, by Christian and Israelite, as true. True as to the kind of day, as to the number of the days, as well as to the work done. If we are at liberty, as being convenient to suit our special creed, or particular fancy, to alter and amend the word *six* and substitute ten, one hundred, one thousand, or any other number, we should be equally at liberty to alter and amend *days*, and substitute years, millions of years, or chiliads of years, or periods of time definite or indefinite; or, instead of saying the "Lord made," say the *Lord did not make*, and, in truth, make any statement, however untrue and at variance with the recorded word.

It is strange how sound intellects, if honest to themselves, could for an instant maintain, that the *days* here named were anything but *days* such as the Israelites were enjoying, or that the number *six* was any other number than *six*, or that the statement that *all* things, nothing excepted, were made in these *six days*, were any other than six natural days; or, that the geologic faith, which requires the total annihilation of this portion of the fourth commandment, and other portions of scripture, is coincident with the scriptural and Christian faith, which is based upon the record as it stands.

Let the geologist be true to himself, and firm to his faith (if he finds ground for it), but let him be ashamed of that servility, which compels him to resort to misnomers, miscounting, and misstatements, to curry favor with any sect, or any other faith. Let him assert, and show his grounds for that assertion, and plant himself firmly on his belief, that pre-Adamite fossils *were* preceded by vegetable and animal life, in direct opposition to the scriptural and Christian faith that they *were not*, and the geologist has a free field, and a fair start, unencumbered by any other faith, to make his the shining light, if he can prove the foundation of his faith to be true, that vegetable and animal life *did* precede the pre-Adamite fossils.

CHAPTER VI.

EXPUNGING THE MOSAIC ACCOUNT OF CREATION, AND THE
SUBSTITUTION OF THE GEOLOGICAL, BY HUGH MILLER.

It is generally conceded, that no man who has written the English language, in the present age, possessed that elegant control of words, and been able to combine them in such fascinating sentences, as the distinguished Hugh Miller. Though he has gone from the theatre of action on earth, his mind's efforts are in active exercise throughout the land, producing a deep and lasting effect.

To eulogize his style, his composition, the sweet simplicity of manner to his reader and his works generally, is the spontaneous effort of every sympathizing mind, and should be that of every ingenuous heart. It should, in like manner, be the duty of every Christian pen to denounce, in unmeasured terms, his attacks upon the Bible, and his frenzied attempt to blast the truth of the Mosaic narrative of creation, and pre-

sumptuously propose its elimination in substance, and the substitution, in lieu thereof, his particular theory. Such, however, is his power and control over words, and such his skill in their use, that while he apparently supports the scriptures, he, nevertheless, denounces them, and that, too, in a way calculated to produce the greatest amount of harm. His own words, when closely analyzed, will undoubtedly bear us out in this position; and whatever may have been the state of mind which conduced to this result — the result alone is what we are bound to consider, and not the cause.

Mr. Miller's first efforts in geology were mainly directed toward developing the surface fossils found in his Scottish rambles. His "Old Red Sandstone," and "Footprints," abound in beautiful and accurate descriptions of members of the fossil kingdom; and from the entire oneness of purpose which characterized his researches, we see no evidence, upon the face of the works themselves, which indicate that the thought of classifying fossils into pre-Adamite archetype forms and post-Adamite fossils ever occurred to him. We hear him, however, tell of his laying open a nodule (a loose rolling stone) with a single blow of the hammer, and peering at the entombed work of the Creator. And with a positiveness that is truly amusing to a

candid mind, he asserts that this was the representation of the form of a plant, or an animal, which lived in a certain geologic age. "How do you know," says the more analogical mind, "that God did not make the enclosed fossil, as well as the material, or even the nodule, a fiat form, without a parent?" For it is certain he made the nodule at some time complete, and without a precedent, and why not the fossil form, which is only one element of the existence of the nodule as a whole, as well?

"But," says Mr. Miller, "the fossils are so complete, so accurate, so life-like, so true to the natural forms in life, they must, of necessity, have patterned after life." Did he ever ask himself who causes and makes the fossil now? And if God makes them now, and grows them daily, who made the beginning of all things? Who made the rocks, and who makes them now? Is a fossil form, *per se*, anything but a rock?

But blind to all analogical reasonings, he presses on the exception to all rule in common with other geologists, that the fossil kingdom was ingrafted with parents, while all other first forms in nature started without, in a creative fiat. To a mind as needle-like as his, more keen than able, the glaring inconsistency which he displays in battling down the positions of develop-

ment advanced by the author of the "Vestiges of Creation," and showing most clearly, as he does, that development of one form out of another was not the order of creative wisdom, and that every line of existence started complete from the hand of the Creator; he stultifies his own labored argument, by declaring in his reasons, in substance, if not in words, that the fossil is an exception, and not his well-established rule.

Mr. Miller may have been ranked with the reconcilists, Dr. Chalmers and Dr. Pye Smith, until the appearance of his "Testimony of the Rocks." Here he throws off all restraint, if not disguise, and boldly asserts what other geologists substantially, but more tamely and cautiously, have suggested, and which all, in common, believe. He boldly asserts, there, that all things in heaven and earth *were not* made in six days, and calls upon his readers to disbelieve the Bible, which asserts that doctrine. He insists, too, that the word "day" used in the first sixth of the Mosaic narrative shall be eliminated, and the geologic term, "Azoic period," substituted therefor. He insists that the word "day" in the second sixth shall be stricken out, and the high-sounding geologic term, "Silurian, or Old Red Sandstone period," substituted therefor. For the word "day" in the third sixth, he proposes the substitution

of "Carboniferous period." For the word "day" in the fourth sixth, he calls upon his readers to substitute the "Permian and Triassic period." For the fifth sixth, the "Oolitic and Cretaceous period." And for the last sixth, he proposes the "Tertiary period."

To those candid minds which look facts in the face, and call things by their proper names, this is certainly a most startling proposition, as coming from a man who has such rank and standing in the world as a *Christian and religious author*. There has been no worse book published against the authenticity and truth of the Bible than his, and certainly none more destructive, in a fascinating way, to the inquiring mind after truth; for, while he apparently gives credit to the writings of Moses, and upholds them ostensibly, it is evident that, like the skilful pugilist, he elevates the head of his enemy, that he may deal him more powerful and well-directed blows. It may be well for some geologists to assert the reconciling and Christian biblical character of Hugh Miller, as an excuse for such a bold attempt to submerge the Bible account of creation in a maze of geologic names and a fog of fossil forms; yet the truth is just here and nowhere else, that he has proposed to eliminate the Mosaic hypothesis (if it may be called one), and substitute therefor his own.

It seems that this charge is well chosen and conclusively shown from his "Testimony of the Rocks;" and however charitable may be his friends, or however Christian may be his followers, he stands there branded with as bold and reckless an attempt as was ever made by man, to overthrow the authenticity of the Bible. And, as we have before hinted, the cause which has conduced to this result is not for us to handle: that painful duty, if done at all, must be done by those who had better opportunities than transatlantic critics for observing his declining and last days.

But the work itself stands as a beacon-light to geology and geologists, at the head of a long line of beauty and knowledge; and its damaging influence is just equal, whatever may have been the circumstances or condition of mind of its most talented and distinguished author. It is the last thing we would do, to disturb the peace of mind of his friends, near or distant; we are, however, not dealing with the man, but with the principles which he controverted. These principles are the imperishable rights of the world, and, in their defence by us, language may be used which possibly seems severe; but let no one mistake this language for the principles themselves.

What, then, are the grounds upon which these elimi-

nations and substitutions are urged? Not upon the philological construction of the language used by the inspired author; not upon any grounds found within the record itself; not upon other inspired writings as bearing directly in explanation; nor upon any historic or monumental archives: but simply upon his own reading of certain forms in Nature, which convey, by reason of certain individual proclivities, certain supposed truths.

For the sake of an illustration of this ground of opinion, let us suppose that every tree that was ever made, including those which sprang from the hand of the Creator by a first fiat, was still upon the earth—having been, by some miraculous interference, preserved when they had arrived at complete forms; suppose that, in this state of things, Mr. Miller had wandered over hill and dale, to examine and determine which trees were and which were not pre-Adamite? in other words, which were the ones made by *a fiat*, and which those grown from *a seed*? But let us make the supposition a little more geological. Suppose that, in places, he found a peculiar kind of tree, almost uniformly felled, with many others atop of it—sometimes more kinds, sometimes fewer kinds, and sometimes none—yet all perfect as when made or growing: what

would be the conclusion respecting the origin of any or all of them? or could he point out a tree made by *a fiat*, or one *grown from the seed*?

Mr. Miller, with his keenness of argument, would say, and rightly too, that the tree which lay under fell first (for it would be unreasonable to argue that they were made in that position, since it is one not of natural growth, but of decay); and he might possibly, in like manner as in his famous story of "Dobbin and Jack," and the "top-upon-bottom order of things" in the ditch, determine which fell first and which last. But when the analogy runs into the fossil and rock kingdom, that top-upon-bottom argument fails, because the rocks and fossils are *in their natural positions, and are found just as they grow from day to day under our own observation.*

"But," say Mr. Miller and his geologic friends, "in the rock and fossil kingdoms we find twigs of trees only, and parts of animals—a petrified shell here, or a tooth there—and in every kind of rock different fossilized animals and plants. Why is this?" All we can say is, that some soils produce oats, some rye, some wheat; some one kind of tree, and some another; some climates support one kind of animal, and some another. We can not tell the reason why, though we

know the fact. We know the fact, too, that the fossil kingdom is now going on in its formation by this fragmentary rule; and we are satisfied with this fact as it stands, and do not call upon the Creator or our own frailness for a reason.

But because Mr. Miller was not able to master a reason for such (to him) a strange and deceptive course of the Creator, he proposes, in common with others, to strike out the Scriptures, and, if a Bible be allowed, substitute his speculations for recorded truths. Nor can we determine from his writings anything but ridicule of the idea that God ever made a fossil form by a fiat. He admits that fossils are made daily, as trees, plants, shrubs, or animals, are grown; but denies the probability that fossils could have had the same origin in archetypes as these. Hence his faith that pre-Adamite fossils were all preceded by vegetable or animal life. Now, if Mr. Miller had pursued the course of a truly scientific man, he would first have found it necessary or convenient to *prove his starting-point*—the foundation of his would-be science; that is, that God *could not* and *did not* make the pre-Adamite fossils, or the rocks which contain them, by a creative fiat. Nor, so far as we are aware, has he ever attempted the task; and while the Mosaic account and all its depen-

dencies claim all things to have been made in six days, it is truly amusing in one sense, and painful in another, to see with what careless indifference that truth is ignored by the assumption of a foundation on which to build his geologic framework and truly infidel structure.

So far as we can determine, the position of Mr. Miller is in some respects enigmatical. It is not to be presumed that he so far underrated language as to suppose he was upholding the Mosaic narrative when he boldly and without the slightest reserve proposed the striking out and substitution to which we have referred; nor that a man of his deep reading and evident common sense could have supposed he was coinciding with Moses when he amplified upon the two Records, "the Mosaic" and "the Geological," and the "two Theologies." We may possibly explain the enigma by the curious position assumed by many geologists, that while cutting and carving the Scriptures to suit their science, they forget the fact that their assumption is not true science. Mr. Miller, as well as other geologists, assert that the Scriptures can not be committed to error by false science, and this we believe to be true. Who, then, has the true science, he who can not, or he who can, prove his postulate—not possibly

by tangible facts, but with such kinds of analogical reasoning as all logicians admit to be proof?

What, then, the world has received for all time as the biblical and Christian faith in a creation is not to be overturned and destroyed by him who can not prove the first article of a new and differing faith.

As a scientific and accurate reader, we fear Mr. Miller's reputation must suffer when it shall be known that his knowledge of the Mosaic account, either in the original or the English translation is at best quite inaccurate, if not superficial. He labors through many pages in his "Testimony" (under the head of the two records, the Mosaic and the geological) to show that Moses did not see, what he asserts in Genesis was an act of the Creator about sixteen hundred years before he was born; and bases his argument mainly upon appearances, which were deceptive. We give his language:—

"Let me, however, pause for a moment to remark the peculiar character of the language in which we are first introduced in the Mosaic narrative to the heavenly bodies—'*sun, moon, and stars.*' The moon, though absolutely one of the smallest lights of our system, is described as secondary and subordinate to only its greatest light, the sun. It is the apparent, then, and

not the actual, which we find in the passage—what *seemed* to be, not what *was*; and as it was merely what appeared to be greatest that was described to be greatest, on what grounds are we to hold that it may not also have been what *appeared* at the time to be made, that has been described as made? *The sun, moon, and stars, may have been created long before, though it was not till this fourth period of creation that they became visible from the earth's surface.*"

This is his main ground respecting "appearances in Mosaic vision," given to deny the record in another fact as to the fourth day's work. If our distinguished author, who deals such heavy blows against the air, had informed himself, he would have discovered that the *sun* and *moon* are not even named either in the original or in the English Genesis. If they had been named, as stated by Mr. Miller, and in the place stated, the Mosaic account would have been akin to his own frail science. The words are, "*greater and lesser luminary.*" For, as has been shown, the greater light or luminary is the combined light of the sun and all other heavenly bodies to rule the day; and the lesser luminary was the combined light of the moon (when visible) and the starlight. It would be as true as geological science, to insert in the accurate Mosaic narrative, as Mr. Miller

has done, the overshadowing error of “*sun and moon*,” for the “*greater and lesser luminary*.”

We will leave Mr. Miller and his reasonings, however, to the tender mercy of his admiring friends; and, notwithstanding his terrible scientific and biblical mistakes, he was the most elegant and impressive geologic writer of the nineteenth century.

CHAPTER VII.

FORMS IN THE FOSSIL KINGDOM.

THERE is no greater mystery, and when viewed in the proper light no more mystery, surrounding the existence of the fossil kingdom, in its multiform and fragmentary lines, than there is in any other kingdom to which we assign a more direct cause for its formation and usefulness. To our limited appreciation there may be more reason in the bearings and uses of the members of the vegetable and animal kingdoms, because we can see a more direct necessity which each has to the whole. There is a mutual dependency, in one sense, between the one and the other. The animal may not exist without the animal or the plant on which it subsists, while yet there is another and equally important dependence of both upon the strictly mineral.

While this dependence is admitted by all, the manner in which it becomes manifest to us is not so plain.

The animal does not subsist on the plant proper, or the mineral proper; nor does the vegetable consume the mineral proper. The plant must be a *completed form*, minus its *vitality*, before it can administer to the *growth* of the animal. In like manner, the animal must be a completed form (in any assumed stage of completeness), minus its vitality, before it can be useful to any other animal for food to produce growth, or support life when grown. This is apparent without further illustration, and from which we deduce the following:—

That however, or from whatever source in nature the material be drawn which makes up an entity, or completed result or form, that result is an independent form in the great catalogue of LINES OF EXISTENCES.

It matters not what were its antecedents, or what its parentage, or from what kingdoms it has drawn its food, the result, when complete or partial, is a distinct and independent form, and takes rank as one of the great warp-threads of creation. Its size, its apparent use, or its importance to us, is of no account in estimating reasons with Him who made all things. The blade of grass which struggles for a scanty existence on some barren heath, or the towering pine which overlooks the forest—the scarcely visible insect which feeds upon the apparently useless dust floating in the

air, or "the rich man clothed in purple and fine linen, faring sumptuously every day"—the tiny pebble which rolls its life away on some deserted coast, or the proud rock-bound mountain of the tropics which rears its head beyond the drifting snows, are each and all of no less importance, as independent existences, than is the Creator's etching on some slate rock, or a complete petrification, so called, of some huge, and to us, unknown form of animal or plant.

All analogy in reasoning as to a creation fails, when one line of existence, or one completed result in nature, has a different origin assigned to it over any other, and hence it becomes vital to show what is, and what is not, a completed form, or, we might say, an independent form in Nature. We define it to be, *that resulting form which has obtained an existence by the operation of the active laws of nature.*

Thus we say a tree, or plant, or animal, is a completed result in *any stage* of its existence, while the elements which compose either are not, because *they will not independently grow and exist.* The thigh bone of a man may be an element in the completed result, though we well know such an element can not grow, or be made by any process in nature independent of the man himself. Neither can the bark or leaf of a

tree grow independent of the tree. In like manner, in the strickly mineral kingdom, the variety of crystalline forms show how many distinct results are found in that department in nature. Each particular crystalline form is a result of an active law in nature to produce that result, and if the result be repeated, it will again form after the pattern of the first of its kind.

So tyrannical and unvarying is the rule of repeating forms in the crystalline kingdom, that corresponding angles bounding the faces of the same kind of crystals are identical. They also grow, by the mysterious connection of particles of matter with each other, and form, by the same rules, to become completed results, as do plants and animals, though by different natural laws.

The question, then, which becomes of interest to us is, *are the forms in the fossil kingdom completed and independent results, and are they governed by the same laws in forming as are all other independent results in nature?*

On the solution of this question, we think, mainly depends the existence or annihilation of all argument as to the condition of pre-Adamite fossils. For if it can be shown that fossils, *per se*, are *all of them*, both fragmentary and otherwise, *independent results*, and that all independents results are steps in lines of existences

which started from the hand of the Creator by a fiat, we show that the pre-Adamite fossils are bound by the same rule, and hence *were not preceded by animal or vegetable life.*

So far as this discussion goes fossils are of two kinds, pre-Adamite or post-Adamite.

The geologic faith, on the other hand, claims no distinction in origin of pre-Adamite and post-Adamite fossils. They claim that a fossil can not be the subject of a creative fiat, because they see the fossil is now the result of a previous existence of a plant or animal, after which it fashions itself in form, but not in substance, and hence, that all fossils must have followed the same rule. When, then, you ask a geologist, "Does not man grow like the fossil, and the fossil like the tree in analogy of natural law?" — they can not but say yes; but, say they, the fossil is more intimately connected with the plant or animal, than the man or tree with their parents.

The trouble, we think, which the geologist has in reading correctly the nature of the fossil kingdom; has been that he has mistaken the fragmentary fossils, and even the fossils themselves, as *elements* in the existence of vegetable and animal life, instead of regarding them as completed, independent results, and as forming, in

themselves, a kingdom quite as independent as those from which they take their form (vegetable and animal), and their substance (mineral).

A parallel to the fossil kingdom can be found in the kingdom of shadows. According to geologic reasoning, the principle of the shadow must have been of subsequent establishment to that of the object which casts it. This would be unquestionably an error.

We know it is difficult for minds, without much reflection, to apprehend readily how the shadow, as a principle of fiat law, and the thing which casts a shadow now, must not always have been inseparably connected. It must, too, be admitted, that the *exact* shadow of a man was not made before the man himself, though shadows, as types of a line of existence, undoubtedly were. Hence all we can determine as to the date and principle regarding the introduction of shadow as a line, must be as to the fact, and not the form of the shadow made as an archetype.

The first man made in the sunlight on the sixth day, cast his shadow the moment he was brought into full life. But he would not have cast that shadow, if the *light* had not been *divided* from the *darkness* on the first day, and the law thus been manifested in type.

In like manner, the archetypes of the fossil kingdom

were made on the third day, when the rock formations were completed, not, possibly, in *exactness* of subsequent plant and animal form, but in kind, form, and extent, sufficient to meet the requirements of the law of petrification then established in its great variety. Neither the plant or the animal had yet been made; still, when the plants and animals were made, they were met in nature by the law of petrification, ready, as in the case of the shadow, to go forward and produce a fossil kingdom in fragmentary and completed forms, which we have denominated the post-Adamite fossils; while those from which they formed in type were pre-Adamite archetypes.

The reader must then understand, that a fossil is neither *the* plant or *the* animal of which it is claimed that it retains the form; neither is it an element of either, or has it any connection, *per se*, with either. All that man knows respecting the fossil is, that it is the child of two kingdoms, the one giving it form, the other food, and it does not affect the principle of its advent on earth, or its existence as an independent entity, whether it takes form from the vegetable or animal kingdom, or its substance from the metallic or non-metallic mineral kingdom.

It is the child of two parents, as clearly and as un-

equivocally as is any human being, or any animal existence. And as the law of reproduction varies in every kingdom, so does the law of the production of the fossil vary from that of any known kingdom. There are analogies, most certainly, between the formation of crystalline masses, and those masses formed into fossils, by the aid of quite a different parent. But scan the matter closely, and it will be seen that every form in every kingdom has a peculiar law by which its parents give it not only form but substance.

Let us examine, then, by what processes the fossil is made or brought into existence. To those who may not be familiar with either the nature or composition of fossils, it is a common idea that they are what geologists call them—*plants, trees, animals*, or parts of them. This is not so. A fossil is a *stone* so called, or a collection of metallic or non-metallic mineral crystals or amorphous masses of limestone in the shape of a plant or animal, or parts of them, or an imprint upon some rock.

How, then, are they produced, formed, or brought into existence? for it matters not by what term you denominate the fact. This depends upon two conditions, in the absence of either of which the fossil can not be had:—

First. The condition of certain peculiar matter, once either animal, vegetable, or mineral.

Second. The presence of the fossilizing vitality and food, or mineral matter, of the proper kind to make the fossil grow.

We may possibly be censured for asserting that fossils have *vitality*. Is there any complete result in Nature that has *not* its vitality? The tree, the animal, the crystal, the rock, have all a vitality, so long as they exist as completed results. Destroy that vitality by fire, or cause death by other means, and the tree, the animal, the crystal, the rock, all crumble to their elements, each of which elements has its special vitality as such, and can not be destroyed.

These vitalities are of different natures, and are as various as the kingdoms to which they belong; nevertheless, these vitalities are as essential to the making and retention of intact forms in Nature as that of the matter which composes them. It is, therefore, as would seem, a fact which can not be denied, that fossils have their peculiar vitality, as well as any other forms in Nature, because you can destroy them by heat or chemical action, and the fossils crumble back to their elements.

Fossilization, except imprints, is simply petrification,

and would seem to apply as well to the making of fossils as to the formation of rocks. We will, therefore, first treat of the fossils which are petrifications, leaving the subject of imprint fossils for after-consideration. To produce the petrification termed "the fossil," as we have seen, two conditions are necessary—the substance to give form, and the vitality, where petrification will ensue, and the resulting form will be that of the substance which was in a condition to take on the petrifying *vitality*. But if the form was a collection of other substances (then vegetable or animal), which would take up the petrifying vitality, then the resulting form would not be a fossil, but it would be a *stone*; not in the form of either a plant or an animal, except it would *chance* to be so, which is by no means probable, though such might be the case.

Hence, we perceive that it is not the amount or form of the matter which may take on the petrifying vitality, but the condition in which the vitality may be able to meet the matter. It is plain, then, that the petrifying principle must have been coeval with the rocks on their very first manifestation in completed forms under a petrifying law; the petrifying principle being in the *debris* of plant and animal life, and in the rocks proper, manifested in *three* different ways. It is,

then, evident, in all sound reasoning, that if this principle was coeval with the archetype rocks, and was so made operative in a fiat, there can be no valid reason advanced to show that in the other two modes of manifestation—namely, in the vegetable and animal fossil forms—they should have a different origin.

Now, we say that the archetype fossil-plant forms and the archetype fossil-animal forms have no more connection with the plants and animals themselves than any other offspring has with the archetype parents which have produced a line of existence; and hence, like all other things, were ushered into place in completed forms by a creative fiat *without parents*. For, not only the fragmentary but the completed fossils, both of plants and animals, are independent existences, possessed of vitality and substance, but, like all other things, perform their special duty in the great scale of creation.

To show this, let us suppose we were examining the petrified tooth of a shark. When we look at the animal in life, we find that one element making up the creature is a tooth; and we discover a similar tooth petrified. Now, the geologist can discern no difference between the two lines of existence—the tooth in the shark's head, and the petrification. But the anti-

geologist asks the question, "Was this petrification formed in such a depth of rock as to preclude the possibility that it is a post-Adamite fossil?" And, if answered in the affirmative, he then assigns his belief that it was a pre-Adamite fossil shark's tooth, and was a member of that kingdom which was formed by a fiat without a parent. Why? Because it is a completed existence, and is not an *element* of a living shark. The shark's tooth can not grow *independent* of the shark, while the fossil can. Now, we have no difficulty in admitting that the shark and his teeth were made by fiat; yet another form, in another kingdom of an entirely differing composition, could not have been made in the same way, because they correspond in form.

Upon that principle, there should not have been but one shark's tooth made, as an archetype; since, if there was, it must have been of a shark reproduced from its parent. The argument, if it has any weight, precludes the idea of such archetype forms having been made; and it narrows down creation still further to suppose that these lines of existences, having similar forms and totally differing compositions, could have been made by the Creative Wisdom in archetypes!

As further ground for separating the two lines of existences from each other, we would remark that

they spring from different parents, are governed in their formation by different laws, are fed by different food, are sustained by different affinities, have different offices (whatever they may be) to perform; and, while the one is naturally perishable, the other is naturally imperishable.

Thus we have shown, and it is believed conclusively, that the fossils, although indebted on the one side to vegetable and animal matter *after it has lost its vitality*, and on the other to the mineral kingdom for their birth and formation, there is a *fossil vitality* which controls them in their peculiar kingdom, constituting them independent forms with *life* differing from that of either parent. It matters not by what peculiar law of parentage a given independent line of existence is reproduced, no such line *can* be engrafted upon creation without admitting at once the development theory of the "Vestiges of Creation," so forcibly and ably controverted by the distinguished Hugh Miller. Each and every such independent line must start without parents, as did man, the animal, the plant, the vegetable, or the crystal.

Nor can we see by what plausible idiosyncrasy the analogical mind can arrive at any other conclusion, when that mind admits the creative fiat to have start-

ed the vegetable, animal, and crystalline kingdoms in all their members. We know the fossil has parents now, and we can produce them, as we can produce those of the plant, breed the animal, or form the crystal.

As we can not determine how many of any given kind of tree were made as archetypes, nor how many plants, nor how many animals, so too we are unable to tell how many fossils, or in fact what kind of fossils, were made as archetypes. Nor is it probable that it was intended that man should know the length and breadth of the hidden mysteries which surround these peculiar forms, or be able to discern those which were archetypes from those which are reproduced forms.

This naturally brings us down to the classification of fossils, which certainly seems to be that one adopted by all—the pre-Adamite and post-Adamite; but as to which are and which are not pre-Adamite, it is impossible for the biblical Christian to agree with the geologist. It is undoubtedly true that very many fossils attributed to parent plants and animals as having lived in the pre-Adamite periods of time, are from plants and animals of the Mosaic narrative; and, although they are said to be extinct, they may be yet living on portions of the dry land or in waters entirely unexplored by man.

There are others, too, which were of the Mosaic creation, and have lived on the earth since, and have probably become extinct. From these thoughts two propositions emanate :—

First. The geologist can not show to the contrary, and there is probability in the supposition, that the pre-Adamite fossils are the archetypes of the *Mosaic creation* ; and, if the plants and animals are not found on the earth now, they have passed away in a natural or cataclysmic decadence : and thus that order is marked in the upward fossiliferous series of the rock-formations as the plants and animals have been eliminated from existence from time to time.

Second. No geologist, of his own knowledge, can assert that the plant or animal parent of any particular fossil which he may select, no matter what or which, is not now in growth and existence somewhere upon the earth !

As a corollary to these propositions, there follows this, that no geologist can say what fossils are and what fossils are not exclusively contained in any given rock-formation. So far as his knowledge goes, there may be every species of fossil, yet found, discovered in each and every of his so-called geologic periods.

We now speak of knowledge as the basis of what

geologists denominate *science*. We admit that there is far more probability in the idea that the fossiliferous range upward in the rock-formations are archetypes and records of the Mosaic creation; and that the history there related is the true history of the order in which these various lines of existence have passed away in point of time, if they have so passed away, than that every geologic period contains the entire range of fossiliferous entities. In this view of the fossil kingdom, a positive utility is discernible; while in the chance placement of fossils here and there—the result of aimless destruction of all living things, according to geologic periods—nothing but mysteriousness can be deduced. It should be the first aim of any reasonable, rational creature, who reveres his Maker, when he attempts to translate the secret signs in Nature, to give that coloring to God's acts which tends to show the greatest amount of wisdom and the least appearance of folly. If, then, the geologist be not hopelessly engulfed in his theories, he will pursue this course when his eyes are open to the truth. He will not translate that to the condemnation in folly of his Creator which can be turned to wisdom. He will rather yield some of his cherished principles, and look at things as they are, and read them accordingly.

While we have the fossil forms under consideration, we are bound to meet in some place, and it may be done here as well as elsewhere, a stronghold of the geologists, and one which Mr. Hugh Miller handles with such amazing strength and force—the *fossil corprolite*. Mr. Miller remarks on this head, that “geologists find not unfrequently among their fossils, the dung [corprolite] of the carniferous vertebrates charged in many instances with the teeth, bones, and scales, of the creatures on which they had preyed, and strongly impressed in at least the corprolites of the larger Palæozoic ganoids of the enalosaurus of the secondary period, by the screw-like markings of a spiral intestine similar in form to that now exemplified by sharks and rays.” And he then goes on in a triumphant strain of argument that, in his own mind, apparently settles the question.

There is just one inquiry to be made about any petrified corprolite. Do like corprolites now petrify by existing laws of Nature? If so, what are its parents? Mr. Miller says the parent on one side are the larger ganoids of the Palæozoic and existing sharks and rays, with rifle-bored embrasures; and *we* say, upon the other, the vitality of petrification, which, acting in connection, produces the independent result

so triumphantly elaborated by himself, and referred to by other geologists. As an independent member of the fossil kingdom, it typifies a separate line of existence, and is as much entitled to its archetype as the parent on either side.

It is believed that most geologists would grant, that the ganoid, although possibly the child of a pre-existing ganoid, spontaneously suggests the idea of an archetype ganoid at some time without parents. So, too, the corprolite *unpetrified*, should not have its archetype because it is an active element of the living ganoid; but when that element assumes, by virtue of new parentage, an entirely *new substance*, it is no longer the first element, but a new, completed, independent result, which, like any and every other natural form, should be entitled to be ranked as separate lines of existences, and hence must, in all analogy, have had its archetype form.

But the startling point of triumph conceived to be secured by Mr. Miller, and copied extensively by other geologists, is not so much in the elaboration and skilful handling of the corprolite itself, as in the unfolding its internal structure, and displaying it, element by element, as conclusive proof of its origin. And we would remark, that here is the stumbling-block of the

geologist, he makes no distinction between an element in one result, and that element when it takes on a new composition, and becomes itself another and completed result. He claims, and undoubtedly claims truly, that the corprolite is "charged in many instances with the teeth, bones, and scales of the creatures on which they have preyed." We use his language, but must correct his meaning, since the language, as it stands, conveys a false impression. The unpetrified corprolite may contain "teeth, bones, and scales of the creatures on which they have preyed," but the petrified corprolite, if it be an archetype, contains no such things; it may contain petrifications in these forms, and, if the corprolite be a petrification post-Adamite, following its pre-Adamite type, then these teeth, bones, and scales were once elements of living entities, which have lost their places as elements of an old, and become, in form and composition, elements of a new, organism.

The perfection of fossils is urged by geologist to disprove their archetype origin. So nearly, say they, do they resemble the living forms, that no human skill could imitate their correctness. We can not see the force of the argument, as disproving their archetype origin, for, instead of its being an adverse, it is a coincident proof. For it is scarcely possible that the ele-

ments would more cautiously and carefully preserve the matter to be petrified, and do the work better than He who first moulded them as patterns for the manifestation and subsequent action of the law.

We pass, now, from the complete and positive petrification to a more difficult subject, the semi or partial petrifications, where the matter was undergoing the process, and from some cause has been arrested, leaving the petrified and the unpetrified substances in connection. It is from this class of fossils that geology draws most of its strength, and by a skilful confusion of these with the completed fossils, both archetypes and types, all are ranked upon the same footing as to origin. So little of analysis and generalization is there in the mass of the human mind, that a geologist has but to present to an audience a half-formed fossil, where the bone, or shell, or fibre of wood is visible, and the fossilizing process attached in the same specimen, and the conclusion, in such minds, is irresistible, without explanation, that all fossils have been formed in the same way. Present to that same audience an increasing and growing plant, and without previous education, the conclusion would be, that all plants grew in the same manner, till reflection would show them that there must, of necessity, have been a first

one, and that first one could not have made itself, but was made complete by the same power which causes its repetition.

It is only by the analysis of principles that such reasonings respecting fiat forms are established, provided we can not draw a direct parallel in nature. But when analogical reasoning is certified to by a familiar example, the reasoning becomes a demonstration. If, then, we show an example where one form in nature is so far changed as to loose its identity (and by a hidden law quite as inexplicable as the making of fossil forms, from once living ones), then this grows into another distinct passive existence, and from that develops into an active and living existence, we show a direct parallel to the birth of the fossil, and its independent state.

We refer to the familiar history of the zoological order, lepidoptera, or butterflies and moths, where parentage produces a different species of existence from itself, and where the intermediate matter or form has no attribute of its parent; and this latter form, as a parent of another, has no attribute of its offspring. We give this illustration in this place to show, that as the chrysalis is a completed and independent form in nature, it must have had its archetype in the primitive

creation, as well as the catapillar, which is its parent; and the catapillar, in like manner, owes its parentage to the lepidoptera. So that, in truth, the butterfly does not reproduce itself, nor does the fossil reproduce itself; but the butterfly, from its larva, produces an independent and totally different form, while the animal not only reproduces itself, but does, in addition, just what the butterfly does in another way, produces the fossil, an entirely different and independent thing.

Now if the catapillar be not an independent form in nature, what is? and if it had not its archetype in the primitive creation, what had? We do not intend to be understood as basing the main argument upon this simple illustration, for there may be those who will deny that the catapillar is anything more than the young butterfly making its way to maturity. We think, however, the position is sound, because offspring generally resemble parental forms, and are of the same general natures, whereas the catapillar, the chrysalis, and the butterfly bear no analogy to each other. Nor can the chrysalis be ranked as an ova, for then it would be an element of the butterfly, and would be barred from the distinction of an independent existence, and grown to maturity as such.

There is another curious instance in the crystalline

kingdom, where masses of crystals are combined almost nightly, at certain seasons of the year, in the very fanciful forms of plant-leaves of an endless variety. We refer to frost-marks upon glass windows, but particularly to those more extensive and perfect ones seen upon flag-stone pavements. They are, when formed, in principle analogous to the fossil; that is, the crystals composing its mass, although different, are arranged in precisely the form of a fossil. But this peculiar line of existence neither has the composition of a fossil nor has it the same parentage, and hence is not properly a fossil. Though not a fossil, it is, nevertheless, so nearly analogous that it assumes similar forms and similar crystalline composition, and is as mysterious in its formation and uses as the fossil itself. The *frost-mark kingdom*, in its variety of forms, is no less determined *as a kingdom* than the range of fossil forms. Nor is it less determined than the plant forms, which are the parents to portions of the fossil kingdom; for the frost-marks upon mud *can be* the parent of a fossil form.

We only adduce *these lines of existences of frost-marks*, fleeting at times as they are, to show a pervading mystery in forms in nature, and that even certain crystalline forms *make of themselves*, either with or without an

apparent parent. If a leaf be moistened and laid upon a frosted glass, the imprint is left in a frost-mark. We at once say the cause is apparent. But if that same or a similar mark is made while we sleep, we say the cause is a mystery. Why? Simply because we are in the habit of looking to causes to produce effects. We know by experience that the moistened leaf and the law of congelation of water are the parents of a frost-mark made in the manner specified, and we count with certainty for the result. But we can not tell what the parent on the one side of the frost-mark is, which forms of itself, though we do know the parent on the other side, the law of crystallization of water. The *two fossil frost-marks*, the one made by a moistened leaf, and the frost-leaf made without it, may not be identical in form; nevertheless, to a casual observer who did not *know* the parents, both would be attributed to the same general cause. And the geologist himself, if brought upon the stand, would testify that they were mysterious forms made by the operation of natural laws; and although in form they were *generally analogous* to living plant-leaves, *no plant life preceded* their formation!

The analogy between the frost-print kingdom and the fossil kingdom may not be readily admitted; but

we can see no difference whatever in principle, and for the reason that the frost-mark or leaf is a completed result in Nature, and no reason can be assigned, abstractly, for its spontaneous appearance, which can not be a conclusive reason why God could make in like manner the fossil a complete form, without *an apparent parent* as well. Or even go further — that he can in like manner make them now, or could at any other time, without vitiating his mode of creation. The illustration goes to show that forms in Nature, both as to their origin, or archetypes, and their reproduction, are somewhat beyond the reach of knowledge in man, and that the fossil and frost-print kingdoms, which are alike puzzles in themselves, are not to be read *as science* by any pretender. He may have his *belief*, or his *faith*, as to the origin of such forms, or the motive which guided the creative fiat, or guides the creative control; but that man places little value on a scientific reputation who certifies such unknown and indeterminate results as *science of the nineteenth century*.

And here the reader must allow us to call attention to what in this connection is, and what is not, science. To endeavor by chemical or philosophical knowledge to determine the particular law in Nature which operates in developing these forms, their composition, or

the affinities which cause them to exist, is what is true science if the result be correct. But to endeavor to show the origin of these forms, either in a creative fiat or by a process of development, is bringing science to determine a result which every man knows can not be done ; it must be simply a faith ; and he who asserts those things to be science which belong to the region of the unknown, simply makes for himself an immortal niche in the vast vault of speculative philosophy, which the stern realities of true Science in known things is making more and more apparent and appreciable as she makes her onward strides in imperishable truth.

But to return to the semi-petrifaction. The geologist will be compelled to establish two points respecting such an entity, before it can have any weight in his argument, to establish his faith that pre-Adamite fossils were preceded by vegetable and animal life :—

First. That the bone or fibre of wood making part of the fossil is bone or wood—that is, that they are chemically of identical composition ; and—

Second. That these semi-fossils were pre-Adamite.

It is most confidently asserted that no fossil which is six thousand years old could, in the decadences of na-

ture to which it must in that time have been exposed, contains either bone or wood in the state in which they existed in the animal or plant. That there are appearances in the fossil which resemble bone or wood is not denied; but that real bone or wood exists in any fossil which can be shown to be six thousand years old, is denied upon all well-established laws in physical philosophy and chemistry. The Creator has made the perishable, perishable in the operation of his natural laws. The perishable is not in Nature imperishable, without the aid of man to make it measurably so.

If the geologist, however, can *show* that the semi-fossil *was* a pre-Adamite form, it would go some distance as a make-weight in his theory. But even that proof might not be conclusive evidence that this compound, or semi-fossil, did not have its archetypes fashioned by the creative-fiat law. This question is not so clear as the one respecting the pure fossil. It is self-evident, however, that no such proof can be adduced; and, until it is, there is no occasion to prove the contrary. And to use the heavy and conclusive argument of our distinguished geologist, Mr. Miller, we settle the question respecting the semi-fossils by saying that the hypothesis that they are pre-Adamite is

the geologist's, and not the anti-geologist's, and the proof lies with the former.

The strongest argument of geologists to support their faith is derived mainly from two grounds:—

First. That they find in one great division, or period (as they denominate certain conventional divisions), different fossil forms from those in another; and —

Second. They find a succession upward, beginning with the lower orders of animals, and ascending to the higher.

Admitting, for the moment, that their positions be true (and, as far as our knowledge goes, they have been true, at least six months at a time, during the popularity of geology), candidly considered as a whole, what does it show, if the pre-Adamite fossils were not preceded by vegetable and animal life? It manifests no more reason in itself (except, possibly, as we have remarked before, to show the order in which some lines of existences, which were Mosaic, have since become extinct, if that be true), than it is an answer to the abstract question, why they were made at all?

The reason why the Creator has disseminated the fossil kingdom in the rock formations in the order in

which we find them, can no sooner be answered than the question, why one rock is found in America, another in Europe, another in Asia? or jewels in one part of the world and not in another? or gold in California and the Siberian mountains? or why one soil will produce wheat, another corn, or any other peculiar cereal? or that coal is found in one place, and is not a universal element? The entire range of questions as to placement of entities, both living and fossil, is involved in the unknown, and he who can give a *certain* reason for any such mysterious placement, can tell why one kind of rock is honored with a peculiar fossil, or why, possibly, the fossil was put in them at all.

But the "top-upon-bottom" argument of our distinguished scientific fossil historian, Hugh Miller, is the superficial fly-trap which entrances the "yellow-covered" reader in science.

If, however, he had resolved his argument into a truthful analogy, and asked his reader to have accompanied him while he related the story, how man was introduced upon earth, what was made of him first, what last, on the "top-upon-bottom" philosophy, and the time consumed by the completion of his stately form, judged of by the time it now takes to do the same thing, he would have done much to illustrate his own

knowledge upon the subject-matter in hand, and which he denominates his science.

The analogical reader might then ask his instructor, “on what ground do you separate the entities of the sixth day, *your* ‘*tertiary period*,’ from each other, and say this was, and this was not, a creative fiat? If your “top-upon-bottom” philosophy be true at all, why is it not true when applied to man? to plant? or to animal? and if man was made in the *tertiary period*, how much of that period was consumed in his making? Did the marrow of his system stand forth as a completed work? were the layers of his bones, and muscles, and flesh, and, finally, skin, arranged in the order of the “top-upon-bottom” science? and the time consumed in their making, judged of by the time it takes to perform the like operations now?

Such questions propound their own answers, and the great school of philosophy which can not be denominated by a better name, than the geological owes all its strength, and all its fallacious conclusions to this “*top-upon-bottom*” argument, and, as a whole, resolves itself into one question, why has the Creator put one thing in nature on or over another? Till this question is answered and satisfactorily proved, geology will never have as much as a starting point in science.

There is another element which the geologic faith claims, of importance in establishing a succession of creations, indicated in the rock formations. They claim to find fossils in one class of rocks, which they do not find in others, and of these fossils, possibly, some do, and some do not, correspond with forms in life which they represent.

In the “Encyclopædia Britannica,” vol. xv., p. 184, will be found the following statement respecting the fossil kingdom, which has the appearance of the offspring of a candid mind, and may be considered a fair exponent of the geologic theory on this point:—

“Of many thousand species of marine zoophyta—mollucs, crustacea, fishes, &c., very few can be exactly paralleled in the system of living nature, most of them are extinct, and only to be understood by the application of laws derived from the study of the most similar existing race. The amount of resemblance between the fossil and the recent tribes is extremely variable: *a few are perfectly identical*; a considerable portion so far similar as to be referred to the *same genera*; a still greater portion can be included in the same great families; almost all can be referred to the same great classes, the vegetable and animal kingdoms. The differences of form and structure are thus known to be

of the same order as those which, at the present day, belong to the productions of *different climates and different local conditions*.... The general effect of the whole investigation is, to prove a *unity of design pervading the fossil and living creations*—one general system is discovered—and the *variations are referred to difference of circumstances*.”

Two suggestions follow this statement:—

First. Has the geologist penetrated every rock formation throughout its entire extent, to determine what fossils it does contain? and,

Second. Has he, in like manner, explored every portion of the earth and waters, and can he say, definitely, that the animals, so represented, are not now upon the earth, or, if not, that they have not lived in the post-Adamite times?

So far as the geologist *knows*, every rock formation *may contain* every known fossil form, and many more now unknown, since his explorations can never exceed *one millionth* part of any given formation. In like manner, he *can never assert, truthfully*, that any animal, in part or in whole represented by a fossil, *does not*, in this day, live in some portion of the earth. These two facts should, of themselves, be sufficient to arrest attention, and *show the enquirer after truth that no dependence*

can be placed upon such undeterminable conclusions, unfoundedly drawn from such vague data.

Nor can the geologist, as we have said before, show, except inferentially, that a single fossil form was pre-Adamite, yet all analogies in nature lead us to the conclusion, that there must have been pre-Adamite archetype fossils, to have started the law of petrification, in example, just as every line of existence was started in a completed archetype form, and the law regulating its reproduction was first made manifest in that form.

There is still another class of fossil forms which have not been considered, and which, to every mind, presents more of mystery, and leads it insensibly to lean to the conclusion, that such forms at least, whatever may have been the origin of those which we have considered, were preceded by the causes which appear to have produced them. We refer to the imprints of various kinds found upon rock formations: being —

Imprints of the vegetable kingdom.

Imprints of fishes and animals.

Imprints of raindrops: and

Imprints of animal tracks.

This brings us to the division of the post-Adamite fossil kingdom into two classes, or rather species:—

First. The species having *animal and vegetable matter minus vitality* for one parent, and *petrification or the rock-consolidating principle* for the other, and which we have considered.

Second. That species having *vegetable, animal, or mineral matter with or without vitality* for one parent, and the *combination of the petrifying or hardening principle in rock with plasticity of matter* for the other, and which makes the class of imprints of which we are about to speak.

The stone fossil, being the first species, is plainly discernable from the second, though the two accompany each other in the same manifestations. For the imprint is sometimes found to be wholly or partially filled by crystals, or amorphous masses, like a cast in a mould.

The rain-drop imprint is handled with amazing force by the geologist, and the foregone conclusion on the mind is that rain *must* have produced such an apparent phenomenon. The first question which may be asked respecting it is—"Is the imprint a pre-Adamite or post-Adamite form?" If shown to be the former, then it is, like all other pre-Adamite fossils, an archetype; for analogical reasoning brings us to the conclusion that all reproduced forms must have had a fiat origin

in an archetype, as the pattern for a reproduction, not possibly in exact size but in character, such as to establish the law in a manifestation.

In like manner, the imprint of animal tracks following the same law, we may expect to find in pre-Adamite rocks this peculiar entity in archetype. It matters not how strange or odd the thing may appear to us, or how unable we may be to found in reason such lines of existences upon the rule of fiat law, or manifestation in a pattern; these reasons become more apparent on close analogies.

The imprints of vegetable and animal matter with or without vitality — of matter neither vegetable nor animal — only vary the parent on one side, while the other is due to the plasticity of matter and the rock-hardening principle.

These, we think, include all the classes of imprints which are urged by geologists as grounds for the adoption of their faith, and may be regarded, in connection with the stone fossil, as composing all the varieties or types (for we will not cavil about terms) which compose the fossil kingdom.

In the examination of these, as bearing upon the geologic theory, the first question to be decided, when any fossil imprint is produced, is, whether it is a pre-

Adamite form. But, as we have said before, this can not be ascertained for a certainty; yet all analogical reasoning induces us to believe there were pre-Adamite imprints of the nature and kind denominated: else, how can they re-form now?

If we adopt the principle of a creative fiat at all, we must apply the rule to all lines of existences, or show plainly a reason for an assumed exception—or our reasoning fails upon its own data. Now, when the rule of the creative fiat is adopted, it simply amounts to bringing natural archetype forms into existence without parents. If, then, a natural form has no parent which gives rise to its reproduction, then that line of existence is exempted from the rule. But we have yet to learn of any form in Nature which has not its parent or parents.

The parentage of the imprint, we have seen, is most undoubted, and is as clearly established as that of any other line of existence or in any kingdom made up of those lines. The animal, vegetable, and mineral parents are each more plainly seen than the other; and we may, with profit to the reader, ask here, what is

PLASTICITY OF MATTER?

Why can a cat make a track on the snow?

Why can a horse make a track in clay?

Why can a man make his track in mud?

Why can waves ripple up a beach?

These are all questions referred to the plasticity of matter, and we can just as soon answer them as we can —

Why a cat can not make a track on steel?

Why a horse can not make a track on the rock?

We can answer these after our own fashion; but we can assign no other reason than the fact that they were made so. There is no abstract reason why snow was made plastic to receive an impression; nor is there any abstract reason why steel should not have had the same quality, other than the uses they were to be put to, suggested by the wisdom of the Creator.

Nor do we think snow could have had that plasticity imparted to it, to give birth to new and independent forms of matter, without that law of plasticity was manifested in the independent forms there to be obtained.

The snow-tracks are independent entities, and are of a different nature, as such, from the snow-flake proper. They are forms in Nature, having parents as clearly as man himself; and, though we may not readily appreciate the fact, they required archetypes as

necessarily, in analogical reasonings of creative fiats, as the most important entity on earth.

The plasticity of matter is the parent, on the one side, of all such imprints, as conclusively as the petrifying (the opposite process) is in like manner the parent of the stone fossil.

Reasonings upon causes why the Creator has made this form or that, which we find in Nature, are visionary attempts to explain Omnipotence. There is, however, much depending upon faith as to the manner and time of the making of this world. Not because of its necessity as the basis of a science, or because it will minister to the wants and comforts of the human race, but as the basis and a fundamental element in the biblical Christian faith. It is not for us to assert whether these are well chosen, or for what reason they have been thus engrafted; but one thing is certain — that whatever is assumed respecting archetype forms in Nature are equally unknown to the geologist and the Christian. Both convictions, whether they be of fiat law or development, are simple matters of faith. It is, then, for the biblical Christian to assert, equally with the geologist and as positively, that fiat law in all archetype forms is the true science; while the geologist, who admits that law to every existence save one,

and that the fossil, may assert as positively that development in the fossil kingdom makes science alike of his faith.

Who will deny to the latter his right to that faith, provided, he does not rest his acres upon other men's titles?

CHAPTER VIII.

HUGH MILLER'S DISCOVERABLE AND REVEALED.

THE independent mind, not swayed by the clever anecdotes and imaginary stories of this surpassingly gifted man, will see, in all the arguments which he adduces, that it is not so much the explanation of the revealed by the discoverable, as it is to make the revealed subservient to the discoverable. In other words, it is apparent that his mind was wholly taken possession of by his speciality, and a fossil was his God. Nor is he alone in such a position. The stronger the mind, the greater the application—the more earnest the research, the less are the opportunities for the consideration and digestion of other and, possibly, more important collateral facts. The gambler pursues his play till he quotes scripture to prove the uprightness of his profession. The man who demands your purse points to the distinguished death of two of his trade. The atheist quotes scripture as an excuse for his ap-

parent belief; while geology endeavors to show, in the present instance, that the dreamings of Hugh Miller, not the revelations of Moses, are to be taken as the true scripture.

Mr. Miller evinces, throughout his entire works, the strongest evidence of a man with one idea, and from his own confession, little qualified to cope with the Scriptures, either in the original, or as a close student of the English translation. We care not how much detail he may display in his knowledge of the "discoverable," nor how superficially erudite he may be in compassing the entire subject of which he treats but a fraction—if he be totally ignorant of the revealed, certainly his comparisons must be the height of folly. It is a common notion among men, that to make themselves notorious or distinguished, they must pursue one department of knowledge; and if Mr. Miller had not departed from the rule, he would have been nigh immortally distinguished, not only as he is, but those laurels would have remained untarnished in the lapse of time.

But he was evidently anxious to cover too much ground, and has no doubt on this account, gone beyond his depth. Had he confined himself to the development of his mineral forms, and displayed his

amazing descriptive ability to spread knowledge respecting them, as such he would ever have been remembered in literature, free from the blemishes which he has now left upon his fame. His early advantages in education scarcely warranted the hope, that he could, in a comparatively short period of time, master geology in its wondrous detail, the sciences upon which he supposed it was founded, belles-lettres, theology, and the Bible, so completely as to set himself up as teacher of all the former, and annihilator of the latter.

A man's opinions on any subject are to be weighed by the reflecting portion of the community, first by their supposed accuracy, and, if new, by the knowledge which that man possesses, or is supposed to possess, and which he has brought to bear upon the point under consideration. If, then, we judge Hugh Miller's works by this rule in science, where shall we place his productions, wherein he has dealt only in assertions, and, *from the first line of his writing to the last, there is not a single word of proof of his postulates?* He asserts, to be sure, so can any author do the same. But we appeal to his most devoted admirers, and ask whether he has shown or proven that a single fossil which he has elaborated upon, or explained, *was a pre-Adamite fossil.*

Now, if they are *not* pre-Adamite fossils, what does

all his works amount to scientifically. This is the sum and essence of all his geology, as opposed to scripture. Then these evidences, and this "Testimony of the Rocks," is testimony about what? That these fossils exist, and are of the form, fashion, and shape that he claims? For, in all that he has written, he does not pretend to prove more; and, if he did, his proof is nonsense, because, in the nature of things, he can not prove it. Then why does he belie his postulate and call it science? We can give no other solution of the fact, than that he did not know what science was, for we can not suppose he intended to issue false tokens.

As we have remarked, in the early part of this work, there is no cloak which has covered so many errors as that of "testimony," and particularly that kind of testimony which is given without any positive knowledge. We would, by common law, consign such a witness to confined lodgings for a like offence. Yet our distinguished writer comes on the stand as a witness, publishes his testimony, and would lead the public to assume, on his assertion, that the fossils which he describes *were pre-Adamite*, and that they *were preceded* by vegetable and animal life, and has called on the world to execute Moses, and disbelieve the Scriptures on such testimony!

Like testimony would not be listened to in an ordinary court of justice, and we do not see on what ground it shall be received by the world, to convict the Scriptures of an untruth, when they have remained, until now, unimpeached.

Many readers will excuse Mr. Miller, under the supposition that he is a reconcilist, and endeavoring to make scripture and geology agree! What is a reconcilist? Who is a reconcilist in a conflict? What need is there of a reconcilist between geology and scripture? He must be dreaming who would wish to declare, *that* to be coincident which requires reconciliation. The term itself shows opposition, shows conflict, suggests that the one and the other are at variance, and it is used by men who well know what they say, and by its use they would fain calm the fears of the scripturalist, till their dogmas gain footing, under an assumed name and title.

The distinguished writer shows a cant throughout his works, a patronizing style, as much as to say, "we don't want our science shall run down the Bible, and I am endeavoring, in every possible way, to avert that dire calamity; so we will call days periods, and fix up Genesis so as to make it agree with *our true science*." Now our own sentiments are, and we believe them to

be those of the Christian world, the sooner the Bible is run down and overwhelmed by *such science* the better; and instead of doing Christians a favor by such attempts at reconciliation, you do them great disservice.

The Bible is true as it stands, or false as it stands; and if, on its face, it is committed to error and falsehood, geological patching will do it no good. It is not a leaky hull that any skilful calker or mechanic, with his stone hammer and graver, can either make tight or loose at his option.

It is not our intention to deal harshly, but kindly, with Mr. Miller's errors and mistakes. Our object is, to show wherein he is on false ground respecting the creation and the writings of Moses, and do it boldly and fearlessly.

We, too, believe, with him, that the entire scriptural truth rests upon the Mosaic record, for he says, "*the grounds of the Mosaic record are those on which the other scriptures rest.*" Mr. Miller seemed well aware, to attack the Mosaic record was to attack the entire Scriptures, and hence, seeing that his assumed postulate, that pre-Adamite fossils *were preceded by vegetable and animal life*, led to a direct conflict, he has pursued the one-idea course of changing the channel of the Bible

stream, rather than inquiring, for an instant, whether his assumed postulate was true — a very natural error for a man of his peculiar temperament and views.

It becomes, then, of vital importance, not only for the geologist, but for the Bible and Christian believer, that each shall understand *how much* of the Scriptures is cancelled by the geologic faith; that is, how much of the old and new gospel dispensations is untrue, in a plain philological reading, *if the earth and all that therein is were not made in six days.*

Gen. i. 1: "In the beginning, God created the heaven and the earth."

This is copied into the creed: "I believe in God the Father Almighty, *Maker of heaven and earth.*"

The *time* consumed in such making is asserted in the fourth commandment; and hence, as effecting the main truth of the biblical narrative, the *time consumed in making* is as essential as the fact that God *made the heaven and the earth at all.*

Ex. xx. 11: "For in six days the Lord made heaven and earth, the sea and all that in them is."

We think, then, that we shall be borne out in saying that the truth of biblical and Christian faith is founded upon the important stated fact that God is our Maker, and that he made us and all things in the manner

stated in the fourth commandment. For we consider the manner of making evinces as much the power of God, as that he made the worlds at all, and is as essential an element in our faith.

Then, what shall we say of Hugh Miller as a reconcilist, or of any one of his predecessors, Dr. Chalmers, Dr. Pye Smith, and others? Is there to be harmony in flat contradiction? It matters little how much fame a man may have spread abroad for himself through the press; his assertion that unequals are equals will not make them so. If every man who has lived since the time of Noah had asserted that God *did not* make heaven and earth it would not change the fact. Nor do we think it changes the fact even though Hugh Miller, Dr. Chalmers, or Dr. Pye Smith, and every man of science who has lived, had concluded in his own mind that God *did not* make the earth in six days, but that it took Him an indefinite time divided into conventional geological periods.

No sooner can facts be changed by such opinions than the language expressive of these facts. Language is as fixed in its nature as the facts or ideas, be they facts or no, for which it stands. There are many books written out of the Scriptures, but very few in it. And if the eminent divines who have lent themselves

to the reading of a bible in the rocks — where, from the nature of things, detached scraps are gathered here and there, quite as likely to mislead as instruct, because important parts may be unknown — had devoted themselves as assiduously in another field, the Genesis of Moses, they would have discovered the key that would unlock all the mysterious forms in Nature which apparently are to them enigmas. And with all due deference to these distinguished names, we think at least they would have discovered the conflict in all important points between the biblical and Christian cosmogony, and that of the geologic.

Let us return, then, to Hugh Miller's "discoverable" and "revealed," and see the grounds on which he would advise the world to adopt the geologic instead of the biblical and Christian faith, as to the infinitely great question, *who did make us, and how were we made?*

We find him, in the very front of his argument, bringing up as his most important witness, "because," as he asserts, "it is estimated to include within its pale nearly one third of the whole human species" the reliable superstition of Buddhism. We find him saying, "Hindooism has been regarded as furnishing examples of the geologic doctrine of succession of creations extended over immensely protracted geologic periods;

and Buddhism represented as charged with *both the geologic doctrine*, and perhaps less astronomic deduction of a plurality of worlds." This head and front of his argument bears its own comment.

He then goes on to show the final result of completed heathen cosmogonies, and winds up by discarding all of them as nothing, and "a farago of wild and monstrous fable," except that element in them which he extracts — the "*geologic successions*" — and which he elaborates with amazing ability. Thus far, then, by his own showing, is the geologic doctrine a *heathen superstition*, and is not a new and rising science as claimed by its votaries. He claims the superstition to be true, and as entitled, from his so-called geologic proof, to take rank as a science.

Then, if there should remain any doubt in the mind of the reader as to Mr. Miller's true position with respect to nigh the whole church militant, that doubt could be settled by the following passage, as he claims for *his discoverable* an exalted rank. "Unfortunately, however," he says, "what God seems to have done for his revelation, influential theologians of both the Romish and orthodox churches have labored hard to undo; and from their mistaking, in not a few remarkable passages, the scope and object of the vouchsafed

message, they have at various times striven to pledge it to a science as false as even that of Buddhist, Teuton, or Hindu"!! This is all consistent, and we follow him on as he touches the clergy and their teachings in a less open but more sneering manner. "I was not a little struck, lately," he adds, "by finding in a religious periodical of the United States, a worthy Episcopal clergyman bitterly complaining, that whenever his sense of duty led him to denounce from the pulpit the gross infidelity of modern geology, he could see an unbelieving '*grin*' rising on the faces of not a few of his congregation."

If this be an original witticism, perpetrated for the benefit of Mr. Miller's readers, it is certainly for the cause of his sneering infidelity a good hit. If it be even a copied idea, revamped in his peculiar style, and thus receives his endorsement, it is well done, and the *sneer* will be immortal with his immortality.

But we come now to the great argument which he levels at the Bible, to show that there is no science or philosophy in it, and none necessary to its utility. For this purpose he brings up the long line of heathen cosmogonies, and successively shows how their supporters have erred in their versions of a creation, and then cites Cosmos, whom he styles the geographer

of the Church, and brings forward all these errors as evidence that those who believe in the biblical cosmogony must be in the wrong. So far as our limited knowledge extends, these various cosmogonies are not found in the Bible; but their authors, like those of the geologic cosmogony of the present day, were anxious, nay asserted, that there were good grounds for believing them to be true, and some were found therein. And the cosmogony of Cosmos (laughably displayed by Mr. Miller) was claimed by him, as the geologists now claim theirs to be the biblical cosmogony. So it has been, and so it will be while the Bible lasts; some declaring that it is not a text-book on geography, others that it is not an astronomical teacher — others, still, that it is not philosophy — and hence it must not be claimed to be a book of science, but a book of revelation solely.

It shall be time enough to exclude the Bible from either geography, astronomy, philosophy, or from science in its enlarged sense, when a *natural fact* stated in it shall be *shown* to be false. If the natural facts which may be stated on three grounds — history, revelation, and personal knowledge — recorded in the Bible, are not what is in the strictest sense science, we are not aware what science is, or what it consists of.

A natural fact, if stated truly, may be history or revelation, but can not be less than a scientific fact. There are many facts stated in revelation, which are rightfully scientific facts, yet the weakness of science has not yet resolved them, and they may ever remain where they are.

A controlling idea runs throughout Mr. Miller's argument, when he endeavors to show that it is the fault of the anti-geologists, that geology is not received as the cosmogony of the Bible. He says, "Geology rests on a broad, an extending basis of evidence, *wholly independent of revelation*, on which they (the anti-geologists) profess, very unwittingly in all the instances I have yet known, to form their objections. What they need, at most, promise themselves, is to defeat these attempts to reconcile the *two records*, which are made by geologists who respect and believe the Scripture testimony."

This may be taken as a sample of the geologic mode of reconciliation of the "discoverable" and "revealed," and, certainly, it is blowing hot and cold at the same breath. First, he asserts the evidences of geology to be *independent of revelation*, and proposes a reconciliation between the two, by having revelation *absorbed* in geology. He then complains of the anti-geologist, be-

cause they will not surrender revelation to geology, and lauds the geologists for their respect of reconciliation with the Scriptures. This is geologic logic manifest in its sublimest form, and worthy of such double elucidation as Hugh Miller alone could invent.

No, the truth will show itself at times when a writer might wish to conceal it. He foreshadowed what he knew must eventually be the result, that any attempt at reconciliation would result in total disunion, when he said, "what the anti-geologists need, at most, promise themselves, is to defeat these attempts to reconcile the two records," &c.

So far as we can discover from the entire tenor of the "Testimony of the Rocks," and especially the article under the head of "The Discoverable and the Revealed," it would be difficult for a casual reader to determine which result Mr. Miller was laboring for most, the reconciliation of the two records, or their establishment independent of each other. He was, beyond all question, an out-and-out geologist, imbued with every element of his theory, and excited to a pitch almost bordering on frenzy, and yet contrived to sprinkle into his writings, so artistically and skilfully, just enough of Christian soothing reconciliation to entrap and ensnare those who were lulled by the sweet

music of his style into unconsciousness, and who did not, in that dreaming state, penetrate the fog of words and rhetoric with which he surrounded them. Many, unquestionably, at some future day, will read his works with a different bias, and no doubt will be astonished at the conclusions to which they were drawn, solely by dint of elegant language and bewitching harmony of words.

We can spare no more space to the consideration of the peculiar idiosyncracies displayed in his works. There is a truer judge who will speak when we have done. Posterity will do them justice, if we have dealt unjustly by them. The *man* we admire because of the magnetic fire which his pen put into everything it touched, and the gallant style in which it was done. But his geology, alas! what science! his theology, alas! how anti-biblical! and his writings, alas! how plausible and how hurtful!

CHAPTER IX.

CONCLUDING ARGUMENT.

THE point at issue between the geologic reconcilist and the biblical Christian, resolves itself, as we have seen, into a mere question of FAITH. To the geologist proper, who bases his faith respecting a creation upon the same grounds as the reconcilist, the same arguments used for the one will equally apply to the other. Yet to the former we can not object to his *faith*, so long as he does not endeavor to force it upon others under an assumed name.

But to the geologic faith as attempting to supplant the biblical Christian faith, our remarks are more pointedly and specially directed. It is unnecessary to say, that if the geological faith was the same as the biblical Christian faith, there would be no cause for reconciliation.

The thought, then, which naturally suggests itself, what *is* the geological reconcilist's faith? and what *is*

the biblical Christian faith in respect to the conflict under consideration. As we have seen before, there are *two classes* of fossils, whether viewed in the geologic, or by the scriptural faith, as there have been two classes of trees and plants, two classes of certain forming rocks, and two classes of animals.

These two classes are plainly and easily made in the mind of any common thinker. The one class being pre-Adamite, or those made before man, and the post-Adamite, or those which have been reproduced since that time. Now it matters not at *what time* mankind was introduced upon this planet, these divisions are still good, and are the ones we wish to call *special attention* to, in order to apprehend the difference between the *geologic faith* and the *biblical Christian faith*.

We wish to be understood when we speak of *time* respecting the introduction of man, we mean, that by whatever biblical chronology that epoch be dated, that date divides the two classes, making *pre-Adamite* and *post-Adamite*.

The difference between the geologic and the biblical Christian faith is, as to the *manner* and *time* in which *pre-Adamite forms in nature, on this planet, were introduced* by the Creator.

So far as the geologic faith is concerned, it is quite

difficult to decide upon any one of the various suppositions made by different geologists, as to this *manner* and *time* ; for those suppositions are as numerous and different as the geologists who are their authors. But notwithstanding this diversity, there is one point upon which they all agree, and we shall assume that as the element by which to compare and test their faith, as in conflict with the received biblical faith: that is, each geologist rests his proof of manner and time upon previous life, to the pre-Adamite fossils, which are in the forms of animal or plant, either fragmentary or entire. Each geologist, too, varies the manner and time to suit his peculiar notions, while all assert that it was *not by creative fiats* as to manner, *nor six days* as to time. The biblical Christian faith asserts the opposite, that creation was performed as stated by Moses, by creative fiats as to manner, and six days as to time.

It is unnecessary to remind the reader, that neither the geologic nor the biblical faith can be absolutely proved as we can a problem in exact science, and if it were so, we would not style it faith, but science. Much of the importance which the geologic faith has attained, is referred to the fact, that geologists have called their faith science, and thereby misled many into the belief, because they supposed there was posi-

tive proof when there was not. Any intelligent person knows, that what relates to a creation must be taken on faith, yet there are analogical proofs resulting from sound reasoning, which approaches proof, but which is not actual proof.

Hence we call geologic faith, what others might style geologic science, but geologic faith is one thing, and geologic science is quite another. For there is such a thing as geologic science, and it may be stated to be, the development and classification of the fossil and mineral kingdoms. While geologic faith, about which we speak, relates *solely* to the *origin of a portion of the things* developed and classified by geologic science.

Now it is the easiest of all things to blend the two together, and it is a most difficult thing, for the casual thinker, to separate the two, and distinguish between that which *is faith* and that which *is science*.

Then, too, there is still another division as to that which relates to *the origin* of those forms which are *developed and classed* by geologic science.

First. Faith as to the origin of those which are pre-Adamite.

Second. Science as to those of the post-Adamite, whose origin comes under the *knowledge* of man.

Hence, we see there is a broad and clear distinction

between what *is faith* in geology and what *is science*. To the science of geology, either as to the development or classification of the things which fall within its pale, or of that portion which is post-Adamite, and which has its origin within the knowledge of man, we have but little to say. They are facts, and any man can see them for himself; but the conclusions in *faith* as to their origin in the pre-Adamite age, is the substance of our animadversion.

The reader who would understand the course of reasoning respecting the two faiths, would do well to look carefully at the few preceding pages of this chapter, for he might not, by careless reading, take the full meaning intended, and he would necessarily labor in the succeeding argument.

What, then, are the *pre-Adamite forms* upon which a geologic faith is grounded? For the purpose of greater clearness, we will name very many of the most important, though their origin, as claimed by the geologic faith, all depend upon and are controlled by the single set of forms — the fossil kingdom. They are —

Mountain-ranges.

Metamorphic rocks.

Rocks with seams and in layers.

Limestones in their varieties.

Sedimentary rocks so called.

Boulders of various kinds of stone.

Slate rocks of various kinds.

Sandstones of great variety.

Coals of all descriptions.

Soils of various kinds.

And the pre-Adamite fossil kingdom.

We are not aware that geology assigns any origin to the following pre-Adamite metallic substances:—

Iron in mass;	Cerium in mass;
Lead in mass;	Vanadium in mass;
Zinc in mass;	Tungsten in mass;
Copper in mass;	Titanium in mass;
Tin in mass;	Columbium in mass;
Antimony in mass;	Osmium in mass;
Nickel in mass;	Palladium in mass;
Cobalt in mass;	Rhodium in mass;
Arsenic in mass;	Iridium in mass;
Manganese in mass;	Silver in mass;
Mercury in mass;	Platinum in mass;
Bismuth in mass;	Gold in mass;
Cadmium in mass;	Molybdenum in mass;
Tellurium in mass;	Uranium in mass;
Chromium in mass;	

And their almost infinite compounds in mass; or, of

Silicum,	Barium,
Aluminum,	Zirconium,
Calcium,	Lithium,
Magnesium,	Thorium,
Potassium,	Yttrium,
Sodium,	Glucinum,
Strontium,	

And their various compounds, except such as enter the rock formations and fossils above stated ; or of —

Water of various kinds.

The atmosphere.

Oxygen,	Chlorine,
Hydrogen,	Fluorine,
Nitrogen,	Carbon,
Sulphur,	Phosphorous,
Boron,	Bromine,
Iodine,	Selenium,

And most of their compounds ; or of the subtiles, heat, light, electricity, magnetism, and galvanism.

All the above-named substance, and we may say most if not all of their compounds, are admitted, by both geologic and biblical scholars, to be pre-Adamite. It will be sufficiently accurate to call all pre-Adamite, without distinction, as being the burden of the geologic and biblical Christian faith.

It is fairly claimed, and, we think, no geologist will gainsay the position, that no theory as to the formation of the sedimentary processes could be maintained without the aid of the fossil. There is no internal evidence which would be controlling in such a conclusion without them, and hence, we say, the pre-Adamite fossil governs any geologic theory as to the formations of the pre-Adamite earth. So that, although it may not be the *only* ground on which the geologist reasons, it is, nevertheless, the controlling one, and hence may be treated as the exponent of the theory, whatever it may be.

Then respecting pre-Adamite forms relative to the geologic faith, there are two distinct classes.

First. Those to which geologists pretend to assign an origin in development.

Second. Those of which they can give no possible account whatever except as of fiat origin.

While in the biblical Christian faith there is but *one* class, that of *creative fiats*.

Some geologists approach so near to the latter, as to admit creative fiats in all pre-Adamite forms, except in the fossil kingdom and its dependences. These are the views of Mr. Hugh Miller, of Dr. Chalmers, of Dr. Pye Smith, and that class of reconcilists. In other

words, they admit creative fiats to the light, to matter, to water, to atmosphere, to the existing vegetable and animal kingdoms, but deny it to the rock formations; and as for the pre-Adamite substances and forms which we have named, as not accounted for by geologists, they skip all that department of Nature, for they neither develop it according to any hypothesis, nor show it as of fiat origin. It is not difficult, then, for the reader or geologists themselves to determine, how heavily against such witnesses, under the solemn garb of testimony, lies the implied charge of possibly telling the *truth*, and reserving the *whole truth*. As a matter of story-telling, we know well that a writer is bound by no such restraints, and he is at liberty to say as much and what he pleases; but geologic writers generally, and we may say, universally, are not men of straw, they are men of avowed scientific acquirements, who, if they do not subscribe to their works and opinions as testimony, the world assumes, from their character and reputation, at least that it is such.

We may safely assert, without the fear of contradiction by the most hair-brained geologist, that there is not one "completed result," or natural form, in a hundred, which is accounted for in the geologic developments, or assigned any other origin than that in crea-

tive fiats. But to return to the two faiths. Let us then sum up, if we can, all those forms in nature which are admitted by geologists generally, as of the fiat origin. For there are two classes, even of these, as bearing upon a conflict with the biblical Christian faith.

First. That class of forms which are admitted as of fiat origin, within the Mosaical six-day creation.

Second. Those claimed as of fiat origin, in distant and different geologic periods.

Of these two classes no distinction can be made, as to the *manner* of the fiat. Each are admitted to be the result of God's creative will exercised upon *primordial matter*, to produce, instantaneously, the various completed forms. The only difference is, as to the *date*, or time, at which they were introduced.

There is but one more class of substances, or forms, which make up the entire list in nature considered as of geologic origin.

These are *reproduced and resulting fossil forms*, from pre-Mosaic geologic fiat forms; and *on this ground is the entire controversy, as between geologic faith and the biblical Christian faith*, because the latter claims, as stated by Moses, that all *substances and forms* were fiated in *six days*, while the former asserts that these fiats were not

in six days, but *extended through vast, unknown, and undeterminable, and distant, and different periods from each other.* These, we think, are the true and only grounds of conflict between the two *faiths*, setting aside all minor and unimportant considerations. For the geologist will perceive, that if the *reproduced and resulting fossil forms*, from which he draws the inference of *date*, were also admitted into the Mosaic six-day *fiats*, the two *faiths* would be the same.

The whole question of conflict between the two rests upon the evidence which the geologists present, to show this simple question of *date* of creative *fiats*. Their reasoning on the evidence is of two kinds, *inferential* and *analogical*; while the evidence and reasoning on the part of the biblical Christian faith, is not only *inferential* and *analogical*, but approximately *scientific*. We say scientific, because the geologic faith requires the laws of Nature to be changed from what they are now to bring about their *dates*, and asserts conditions of matter which have *no precedent*—a decidedly unscientific assumption; while the biblical Christian faith presents as evidence in its favor these unscientific assumptions, shown to be such by scientific conclusions supporting every point in the chain of argument, by a *precedent* and the equilibrium of Nature.

We will first consider the *inferential* arguments of the geologic faith, presenting every point fairly and fully; at the same time the answers by the biblical Christian faith; then in order, and in like manner, the *analogical*; and finally bring forward, in conclusion, the *scientific reasons* why the geologic faith is inferior to the biblical Christian faith, and why it should be totally discarded. It will be necessary to use some scientific arguments against both the geologic, inferential, and analogical evidences and conclusions; but the main scientific argument will be reserved to the last. We wish to be clearly understood what we mean by the two kinds of reasonings on evidence, both *inferential* and *analogical*, from which are derived one set of conclusions. It may be difficult at all times to distinguish between the two, and they sometimes occur together and in such manner as to be inseparable. Nevertheless, the *inferential evidence* we think to be that conveyed to our senses without a precedent, made appreciable by our general knowledge of things, while the analogical is a more conclusive kind of evidence, and is made so by the fact that we have experienced the same or like thing before as a precedent.

For example: if we are passing through a wood, and discover what looks like the tip of the antler of a

buck, we examine it, find that it has all the little hillock prominences, the color, evidences of wear, and texture of bone, which we know, from our experience, must of necessity have belonged to the animal with which we are acquainted — we at once say, “Yes, this is the tip of a buck’s antler.” This is reasoning by analogy; and, although apparently a plain case, the conclusion from the evidence may be utterly erroneous. For, suppose some ossiferous artist had been amusing himself to imitate the antler tip, and had so well succeeded as to prevent detection by a casual observer — or suppose another and quite a different animal, entirely unknown to the observer, had passed that way, and left this little token of an accident — where is your analogy?

Both these suppositions are in the range of possibility, and hence your analogical conclusions might not be true; and if not true by such analogical evidence, much less can the inferential be assumed as such, yet both at times may be true.

There is a host of just such evidence, though not as strong as the antler tip, advanced by the geologic faith in support of its foundation — *date* of creative fiats. There is a small portion of the pre-Adamite forms only from which the geologist can reason analogically, while

those from which he must reason inferentially are numbered by overpowering odds.

Those from which he must reason inferentially are the entire of the *massive* rock-formations of the earth, the mineral kingdom, the metallic kingdom, and that portion of the fossil kingdom which has not been represented in the knowledge of man by a precedent plant or animal, and its subsequent fragmentary or complete fossilization. For, although some of the sedimentary rocks do, under certain circumstances, reform after their pattern in character, they have not, in the knowledge of man, attained the massiveness of the originals. Their *massiveness* is the precedent which is a bar to any analogical reasoning respecting subsequent formations. Analogical reasoning will hold good, however, as to their being the same kind of rock, and forming like other things after a pattern, but in no other sense. The circumstances of formation, by the showing of the geologic faith, are widely different in both cases, and hence similar circumstances and causes can not be adduced as a ground of analogical reasoning.

There will be no pretence either that the vast range and magnitude of the granites, or the primary and non-forming rocks, can be adduced as analogical rea-

soning to support the geologic faith. There is no pretence that they form now, and hence they have no precedent from which to reason on *their* probable mode of formation.

There is then, we contend, but a small class of forms in the fossil kingdom from which the geologist can reason as to the mode of making, and introduction of, analogous and like forms in the pre-Adamite world.

Before proceeding to consider the evidences, the reader must understand that each form in Nature which is different from another, and which is reproduced persistently so near like its predecessor that the senses can determine its *kind* or *type*, is called one step in that particular line of existence. These lines of existences have been steadily running down from their first introduction to the present time; and while no two have ever been merged into one, or any new existence sprang from an old one, it is conceded that very many of these lines have run out in comparatively a late date. This latter fact it may be well to notice, since it may solve some of the enigmatical problems respecting the fossil.

The first set of inferential evidences which the geologic faith advances is the appearance of certain rocks, which do not now re-form, indicating an igneous fluid

condition of the materials of the earth as the grand starting-point, and is, we should judge, from that fact the nearest point to which they can approach the words of Moses in the first line of the Bible: "In the beginning, God created [space and matter] the heaven and the earth." Our reasons for using the terms "space and matter" are given under the chapter on the first of Genesis in this, and more fully in another work; and we may remark here that it is a very common error in writers, and more especially in geologic ones (of which Hugh Miller stands a pre-eminent example), to use the terms "heavens and earth," instead of "heaven and earth." It is "heaven and earth" in the original, in both the first and second chapters of Genesis; but in the latter, by some typographical error, it has been printed "heavens" in the English translations, and hence, possibly, the almost universal mistranscript. There is but one idea, however, to be gained from both expressions.

We have treated the igneous geologic theory so fully in another work, that it seems like copying our own words to rehearse them here; but the argument would scarce be a unit without at least some of its salient points. And we feel to make an apology to the reader, for taking up his time by a lengthy refutation of

such a supposition. Yet all folly is wisdom till exposed, and hence to the task. There have been wise men who have advocated seriously the former igneous condition of the matter of the earth, and we think there are still some who entertain such dreamy musings even in the present day; though, whether they do so to provoke argument, and thus spread their profit and Quixotic doctrine, or whether they do so seriously in the belief that it was true, we can not say. We take the fact as we find it, and lament the scientific condition of that man's mind who can seriously subscribe to the apparent folly that arsenic, lead, silver, gold, sulphur, carbon, quartz, granite, and limestone, were once a molten, homogeneous, plastic pudding! Well, it is an amusing story for some because of its oddity, and possibly because of its downright absurdity. But let us suppose it to be true as stated, and we try the experiment ourselves, based upon this fire statement as a precedent, because that which has been once done in a natural way can be done again, either naturally or artificially, by the use of like means; for, be it remembered, this is the foundation-principle of all geologic faith, and the principle must as well apply to one set of things as to another. As the geologist says there is nothing like seeing the thing done, and testing re-

sults by our own senses; we then arrive at conclusions which can not be gainsayed! And so, let it be supposed, we put on the crucible filled with the facts which we have enumerated, to prove the great and fundamental truth of all geology, the igneous condition of matter at first. We then put into the vessel the substances, arsenic, lead, silver, gold, sulphur, carbon, quartz, granite, and limestone, and apply the heat. Finally, we have the soul-stirring gratification of seeing the mass gently crouching itself into the depths of the fire-surrounded vessel, but we are stifled with a most suffocating smell of sulphur, and, as we discovered afterward, was fortunately driven from the place, as our chemist told us the arsenic might have finished our geologic experiment earlier than we had intended. The curling clouds of smoke which rose from the little pit as the heat increased were finally swept away, and we began to behold the realization of our fondest hopes. The mass was melted, and we stood in silent but deep meditation over, as we supposed, a fragment of the primeval world. Alas, how pregnant were our thoughts! We fancied, as the heat became less again, we should find a real fragment of a real world in the blackening mass, and we nigh burned our fingers in our indecent haste to reveal the inner mystery and

prove our igneous postulate. In our too eager longing for the consummation of that event, the geologic hammer was raised too high, and fell upon the half-cooled mass, shivering it to atoms! Alas! experiments are not always successful. We searched for our gold — it was gone; we next looked for our silver — alas! it was gone also; of the sulphur there was not even an odor left; of the lead, not as much as a bright drop, nor anything else save a semi-glassy, brittle mass, which did not even resemble granite, quartz, or limestone. Not satisfied with the result, we started for a chemist; told him the whole story, and, as we progressed, a twitching might have been observed around the corners of his mouth; and when the whole story was ended, he looked at us for a moment and burst into a roar of laughter. We expostulated, told him that was no way to treat a scientific matter, and asked an explanation, and we give it in his own words.

“My friend,” said he, “I perceive you have attempted a most laudable and praiseworthy undertaking — that of proving the truth, or showing the fallacy, of the foundation of all geologic faith as to the course of creation. The result of your experiment, however, seems by your own relation to have done neither. But you have made a good start, and I will

aid you with my knowledge as far as I can. There are three laws which control this question of igneous fluidity of the matter of which this earth is composed, namely, different degrees of fusibility of the various substances; different degrees of heat at which they are volatilized, or, as we term it in common language, destroyed; and different specific gravities. You must have seen, in your experiment — and if you did not, you would have seen it if you had observed closely — that every substance (namely, the gold, silver, lead, arsenic, sulphur, and carbon) had totally disappeared before the granite commenced to fuse. This supposed fact, then, which geologists assert as the foundation of their faith, is simply *impossible*, as your experiment demonstrated. Nor can the fusion of the various substances of which the earth is composed be sooner made together, than you can fuse together gunpowder and granite, without the total destruction of the former. It is equally rational to suppose, and would be equally true to assert, that the present vegetable and animal kingdoms and man, inhabited the earth in such molten condition, as that the other elements, which would be destroyed by such heat as well as they, existed in that state unharmed. Admitting, for the sake of argument, a total abrogation

of the laws of nature as to heat, what shall be said of the law of gravity?

“It is plain to see, that even though such a state were possible, the heavier parts would descend to the centre, while the lighter would rise to the top. The average specific gravity of the rock formations is about three, while gold is twenty; that is, gold is about seven times heavier than granite. It is useless to speculate about such conditions, for without a total abrogation of existing natural laws and qualities of matter, such a condition is impossible.”

The explanation of the chemist seems sound, as must be patent to every mind. Now let us examine the grounds given by the advocates of the primordial igneous condition of the earth, and see how strong the evidence is which leads to the conclusion. They say certain rocks, in detached locations, have the appearance of having been in a fused condition. Possibly, to a geologic witness they may, but we have never yet seen a piece of primitive rock the size of a man's hand, that looked as though it had ever been fused, except it came from a volcano, a blast-furnace, or some other place where artificial heat had been ruling. It must be remembered by these surface-skimming individuals, that a lengthy period has elapsed since the Mosaic

creation, and time sufficient to extinguish and light up many volcanoes has rolled away into the past.

The reasoning upon these data, few and meager as they are, is not analogical, but inferential, as no parallel or precedent has been discovered within the knowledge of man, on which to found an analogy. The inferential is scarcely maintainable, since no nearer similarity can be found than the crucible, of which we have spoken, and if that be assumed as a parallel, the most that can be drawn from it is, that rock materials when once fused, lose their special vitality as such, and they *never return to their primitive state*.

From this igneous fluid condition, the sage geologic cosmogonist elaborates upon a shrinking and crimping process in cooling, by which he can demonstrate the manner how Chimborazo, or other towering peaks, were elevated, deep valleys were cast down, ranges of mountains were raised, beds for future oceans were scooped out, and, by such chance throes, were prepared the groundworks and foundations of a world like ours. Crazy dreaming! No, nor as much as that, because dreams are generally analogical. These are very simple suggestions, only fit for destruction by one single ray of truth shed upon them. If the supposition had the first shadow of strength to support it, a secret sat-

isfaction would attend its demolition. But like many other assertions, they stand up till overthrown.

Hence we say, if the igneous condition were even possible, the pudding must have been very cautiously and carefully mixed, and one kind of material must have been divided from another by wondrously accurate plans of division. For there are no two kinds of granite or primitive rock alike, in the various valleys or mountain peaks on the earth! They may have, in some few instances, striking similarities, but no two mountains in the world are alike in structure or in material, which they should be if derived from the igneous mass as claimed. Any man must value his reputation for science, or for truth, and measure them by rare co-ordinates, who soberly sets down to give such trash to the world. If he were writing an April-fool card, or a penny-a-line moon story, the squib would be well put. And when we read them, an inquiring doubt runs through the mind, whether the author intended them as jocular science, or as a forlorn probability.

We pass, now, from this *foundation stone* of the geologic faith, or from the liquid to the solid portions of it, leaving any mind, not satisfied with our exposition, to pursue the phantom still further if they wish.

At this particular point of the geologic faith its advocates are at bay, and for our own purpose of having a completed and full geologic faith as to a creation, to overthrow, we sincerely wish that they could be helped out. But having no theory of our own to advance on their failure, that point of their faith must go by default.

We refer to the ushering in of air and water upon the earth. Now some geologists unwittingly have introduced them by creative fiats; but others, more deep, have ignored this mode, because that weighs heavy, analogically, in favor of the biblical Christian faith respecting the introduction of pre-Adamite fossils by a creative fiat in like manner. So that, having no theory of successive development, in layers or otherwise, to adduce, and finding that creative fiats would, measurably, prove the biblical Christian faith, to the great damage of the geologic, they have wisely (for themselves) leaped over the chasm thus geologically made, and skipped the whole subject philologically, leaving the tight-woven cosmogonist in a slough of geologic despond. We do not know but that the defect is somewhat balanced by the admirable accuracy of detail with which they make up the remainder of their geologic cosmogony. But looking at the failure in an

enlarged view, it would seem that an hypothesis of a creation which fails utterly in these two great points, is weak indeed, and if its advocates help themselves out by a miracle, they seek the controlling element of the biblical Christian faith.

We now launch ourselves into that wondrous sea of geologic science, so called, at whose portals the finger of truth has written letters on the wall — LIKE CAUSES PRODUCE LIKE RESULTS — and like these letters, carry with them a particular meaning. If the advocates of the geologic faith were guided by the axiom above-quoted, then rock formations from a common parent would scarcely be developed. Assuming that the geologic cosmogony has brought us down to solid rock all over the face of the earth, in ridges and furrows, accidentally made by any cause — and by any other cause, the atmosphere surrounded the earth, and the waters covered some or all of the aforesaid rock, and the world was then water, rock, and atmosphere, three of the great elements of our present world — what then?

From this stand-point we may stop and ask a controlling and highly interesting question, both as regards the one or the other of the two faiths. Does the geologic faith evolve all forms in nature, from this granite rock by detrital and water-wear, or does it

admit creative fiats, when each and all the various lines of existences, which are and have been operative during all time upon the earth, were first introduced?

There are geologists who contend, that all forms in nature have been evolved from the granite rock, as well as another class which admit creative fiats to all lines of existences except the sedimentary rock and soil lines, and the entire of the fossil kingdom. To the first class, who are of the "Vestiges-of-Creation" school, and who pretend to no Christian faith, and hence, are not endeavoring to fasten upon it what the biblical Christian faith assumes to be false tokens, we have no answer to make. They may believe, if they choose, that a raven was hatched from the egg of a crystal, or from the crystal itself; such faith finds its own refutation in more extended and refined knowledge.

But it is to that class which, in order to be ostensibly shielded under the Christian faith, are compelled to take just enough of it to suit their purposes, demolishing it as a *unit of truth*, and still claim to give a superior geologic faith. We hazard nothing in saying, that this latter class, and whom we are answering, admit creative fiats in every line of existence in the vegetable and animal kingdoms, in the metallic, non-metallic,

and all primordial matter, while they urge the development process to all rocks, stones, and soils, above the granite basis, including the fossil kingdom, both pre-Adamite and post-Adamite.

The character of the reasoning in the development supposition is more analogical than inferential, yet there is very much of the latter; we admit, frankly, there are analogies for the development of certain forms in the mineral kingdom, and, as analogical reasons, they are just as strong, and no stronger, than the analogy respecting the creative fiat. If we admit creative fiat to one line of existence and deny it to another, nay, if we admit them to all save one, we must show a wondrous reason, amounting to *positive proof*, that that one *was not* the subject of a creative fiat, or the logic will fail upon its own data.

Hence it becomes necessary, at this point of the argument, to show that all the pre-Adamite lines of existences claimed as such by the geologic faith, are dependent for their development upon *one*. The sedimentary processes claimed to have been evolved from the granite rock by water-wear, and detrital, are judged of on two grounds. First, that these rocks are in layers of various and differing inclinations, from horizontal to vertical, and hence supposed to have been

deposited, and subsequently to have been upheaved by some force into these various positions. And, second, from the fact that fossils are found in them, which lead to the supposition, that a creation of plants or animals lived upon the earth at the time these rocks were thus supposed to have been deposited.

It is but too evident, that without the fossils no supposition of date could be deduced. For the fact that one rock lies over another, or that they have seams in them, would not be sufficient evidence to draw the geologic inference, that one was made before the other. Hence, we think, no objection will be urged, in assuming that the fossil controls the whole question as to geologic development of pre-Adamite forms. Then, as the whole ground of assumption depends upon the fossil, we may treat all other lines of existences as having started in a creative fiat. This simplifies the argument, and enables the mind to arrive at the grain without wading through such mountains of chaff.

As far as the experience of man goes, like causes produce like results, and revolving this in our minds, we naturally ask, why comes from this water-wear and detrital of one kind of rock, so many different and widely-varying forms? Why comes from the same cause the gneiss mountains—the mica, talc, schists,

and slate, in their great varieties — the wondrous and widely-spreading clay slates — the extensive grauwacke conglomerates — the so-called silurian limestones — the immense masses of the old red sandstone — the towering mountains of limestones — the necessary, but mysterious variety of coal-beds — the magnesian limestones — the immense layers of sandstone called the new red — the large family of limestones under the titles of shell, lias, oolite, and chalk beds — and, finally, the clays, soils, boulders, and that vast variety of other forms, not spoken of by this hazy supposition — the metallic and non-metallic substances in their endless compounds? With a gravity due to sublimer subjects, our *scientific* geologist asserts this great and well-established principle, that *like causes produce like results*, yet to accommodate the pre-Adamite fossil, and make it an exception instead of being obedient to the analogical rule of creative fiats, he calmly expunges this cardinal of science, and makes the solemn fact a farce.

If this vagary have a shadow of comeliness as a science or truthful hypothesis, why can not the granite evolve the metals, or the non-metallic compounds, as well as the vast rocks said to owe their origin to this source, and which hold them all within their deep-down solidities. How does this stalworth phantom

tell the story of the broadcast jewels, the thread-metallic veins, their secret mineral and metallic hiding-places, which when revealed are like star-dust in the deep expanse of space. Can it tell why one star is brighter than another star, or why they are at various distances from each other, or whether they are, or are not, the clippings of some great central mass of granitic star-light, shaved off in the processes of time, by some huge, unknown, indefinable, and mysterious machine?

We can determine no good ground for one proposition being superior to the other, except that the latter is newer than the former, and may be the basis of as consistent an hypothesis. The failure of the faith to give an approximate idea how these thousands of elements, in the so-called sedimentary rocks, could have been mechanically, or by fiat, introduced in place, makes the faith assume rather the character of a joke than a serious reality. For, suppose we assume that the geologist be driven, *as he is*, at last to admit their introduction in place by a creative fiat, what shall be the *nature of that fiat*? Shall it be by the rule which is admitted as that which bears the greatest amount of probability, that kingdoms are the subjects only of such miracle, or that each mass or fibre, as the detrital and sediment went on, was added, as the mode of

creative wisdom. If the latter, the world, in the earlier geologic age of water-grinding, would present the splendid spectacle of a country flouring-mill, where netted cobwebs catch the flying dust, and where each thread or mass was, relatively, a sparkling line of jewels, or suspended metallic compounds, glistening in the streaming sunlight, as it fell through some accidental opening upon these otherwise unseen beauties.

The first natural suggestion is, why are the pre-Adamite fossils elevated or depressed (for it matters little which term is used), in their origin, above or below the jewels or the metallic compounds? For they are nigh of the same composition as the former, while they are far less intricate in construction than the latter. Taking, then, the analogy of thousands against one, where is the logic which binds to the conclusion that the pre-Adamite fossils were an exception to the rule of creative fiat, calling upon the Creator to do on this account a million, yea, billions of times more work than would be necessary to produce the required result, making his creation a huge folly of analogical contradictions, violating natural laws at every single step, calling upon monstrous unknown and unprecedented causes to show forth *power* and *wisdom*?

What geologist is bold enough to say to the world,

if he respects himself, that he sees a *probability*, in any department of Nature which suggests an analogy or an inference, that twenty thousand *cubic miles* of limestone have been evolved from *granite rock*? Why, this simple, single, isolated, declared fact eclipses Munchausen, as well as the Arabian Nights Entertainment in the strong analogy of Aladdin's lamp. We will not say that the geologists have been as frank as to bind themselves to the exact number of cubic miles, but they have calculated the amount of coal to be about fifteen hundred cubic miles; and we shall come far short of the fact, if we assume near thirteen feet of limestone for every foot of coal; and we will repeat the inquiry here—Which bears the greatest amount of probability of being true, this single hyperbolical assumption respecting the impossible origin of the vast family of limestones, or that the pre-Adamite fossils were made like other admitted forms, by a creative fiat?

Every chemist and mineralogist well knows that lime enters into the composition of the granite rock; but so sparingly, that, to obtain this amount of carbonate of lime required by the geologist, carbonic acid gas, in volume nearly equal to our atmosphere, would first be necessary, and then the debris of granite which would be left would make nigh twenty times

the bulk of the entire so-called sedimentary rock-formation. Now this is a mechanical, or we may say possibly an arithmetical, calculation, which any schoolboy can make; that is, given the quantity of granite rock (which in an average contains sufficient lime, for all kinds do not), and given the amount of limestone on the earth. Not only the volume of carbonic acid gas which would have been required, but the debris of the granite rock left, could be as accurately calculated as can the number of feet in a cord of wood.

Hence we say the family of limestone-rocks of the earth, each and every of which perform their offices as original elements in the great design, is a *positive bar* to the geologic faith that these rocks have had their origin in detrital and sediment. And we here assert, for the benefit of those bearing the biblical and Christian faith, that no devices of sophistical arguments, in our opinion, can ever be adduced, which will make the limestone family dependent upon the granite rock and detrital for its origin. There are internal as well as external evidences, which quite overshadow any such supposition; and if the truth or falsity of the Bible is to depend upon this element of geologic proof, the more the subject is handled, the weaker it becomes as evidence to show that pre-Adamite fossils

were preceded by animal and vegetable life, or that *none* of that kingdom have had their origin in creative fiat.

We would be more particular to elaborate like fallacies in the clay slates, the coal-measures, and other portions of the detrital faith; but we have done that in another work, to which, for further arguments in the so-called sedimentary rocks, we beg leave to refer. There is, however, one point, not handled to any extent there, to which we will briefly refer here. If the cardinal principle, that *like causes produce like results, be true*, let us apply that principle to the making of soils, gravels, sands, &c., which surmount the rock-formations. Now, if we did find in this department of Nature anything to warrant a conclusion, either from their form or material, that they are of sedimental origin, where is it? The geologist assumes the horizontal layers of the various rocks found as evidence that they owe their origin to sediment. Now, do they claim the same law to the soils, sands, and loam which cover rock-formations, as of the same birth—*water-wear detrital and sediment*? If so, why do we not find the soils in layers and in levels analogous to the rocks referred to? Is there any plausible explanation of the fact? or will they skip this, as they do every other

adverse fact, and generously yield up to the Christian faith of fiats these unsolved enigmas?

Will they explain how hill and dale of loam and soils are the products of their consistent faith? how wide-spread districts occur which have no possible analogy to the sediments of the Ganges, the Amazon, the Mississippi, or the Rhine? Neither in composition nor in general form do they spontaneously suggest such a parentage. Look at the section of any bank of earth which contains stones and boulders, of all forms and sizes, from that of a robin's egg to that of a church (of no mean size, either), and see if you can mark the analogy in an alluvial deposit? If the aspirant will do so, or attempt it even, he will have as much ability and boldness as has been displayed by the lamented and we believe deluded, honest man, Hugh Miller. For it mattered little what was the task with his logical pen, whether it was in nature or metaphysics, he would so skilfully handle, elaborate, and distend truth, and smother error, as to make his own deductions positive proof for his reader.

It is so, we fear, with many honest geologists. They have an idea to carry out, and see honestly all of one side of a question—handle and magnify truths to the fullest extent of their tension; while those which weigh

against their dogmas are left to speak for themselves how and when they can. This is too much in the style of schoolboy dialectics; and what seems the strangest element in the whole matter is, that really great men have scanned the horizon of Geology with a glance; have assumed all her dogmas as true, because they see so plainly before them that the fossil must be the sarcophagus of a plant or an animal. And so with as little thought upon collateral truths as they bestow upon the food which succored either, they jump to all the conclusions advanced.

Before closing this branch of the subject, we must call the attention of the reader to a family of forms in the crystalline kingdom which are analogous to those of the fossil kingdom, as they will possibly aid the mind in detaching itself from the foundation of the geologic faith—that of necessarily calling for vegetable and animal life wherever we find crystalline forms which resemble some fancied or real plant or animal. Look you at that section of a block of marble (carbonate of lime, the same material of which most of the fossils are composed), and let your imagination be lively and earnest; search over it, and see if you find anything resembling a form in either the plant or animal kingdom. Nay, let your analogies run further—men

and women in chariots drawn by flying steeds; armies in battle; men in single combat; old women in tattered raiment; snakes, lizards, and reptiles; volutes of infinite sizes and shapes. And in the agate kingdom stranger forms still: oceans rolling their waves against an imaginary shore; rivers wending their silent, tranquil way downward to the sea; drowning forms and triumphal marches of conquerors, displayed in almost speaking truthfulness.

What are these to the geologist? Can he in these forms read the handwriting of God? Will his materialism tell us whence come these things, and whence comes this life-sheet upon which they are written? Are they sedimentary? Have these fanciful forms lived on earth, and been ground to dust, and are these the crystalline petrifications which have resulted from such analogous changes? Let our distinguished literary immortality, Hugh Miller, have used his geologic steel and stone-cutter's graver as carefully on these forms, to develop them, as he has used his hammer in the geologic field and his pen in the study to develop his analogous forms, and the world could be filled with fossils; nay, could be besprinkled with forms at will, typical of every line of existence, known or unknown.

There are forms in Nature untouched by the cau-

tious pen of geologic faith ; and, although these pencilings amounting to solidities in distinct colorings, are not exact forms in analogy, the mystery respecting their establishment as the handwriting of a Creator is no greater as to a fiat, than that of a detached fossil form of the same composition, and representing similar forms. In the kingdom of imprints, however, there would seem to be a closer analogy. Nor can we see more mystery in the making of a grain of sand than in creating the fossils. Nor is there an element in creation more mysterious in its introduction by fiat than another. All analogical reasoning respecting a creation fails on its own data if any different principle is admitted ; though, as we have said before, we do not object to a geologic faith such as is advanced, except so far as the biblical and Christian faith is affected by it. For the good of man, and the enjoyment of our own domain and acres, we heavily protest against those who advocate a scheme calculated to do so much harm, and the unwarranted trespass which it seeks to establish as of right.

CHAPTER X.

SCIENCE OF THE GEOLOGIC FAITH.

WE have now said all that our space will afford respecting the inferential and analogical evidences which the biblical Christian faith has to present as a ground for its acceptance, and the rejection of the geologic. We now come to the scientific evidences, which, in a general way, we have collated on page 120, and to which we now refer.

Throughout all Nature there is an equilibrium: by which is meant, not only that every element is in place, and balanced by the whole, but likewise that, by their working together in decay and reproduction, that equilibrium is continually maintained. While matter takes on different forms, the affinities and actions of these various elements preserve their precise powers; and no one line of existence gets the advantage of another, by taking more matter than is appropriated to its existence. Were this not so, and the energies

of Nature were directed, as claimed by the advocates of the geologic faith, to the making of limestone, for example, that formation would go on till all the carbon and lime in Nature were exhausted; or if they were operating by their own affinities, without equilibrium and counterpoises in the various lines of existence, those would triumph and form, the elements of which possessed the strongest affinities for each other, and the result would be, not an equilibrium, but Nature's energies would be exhausted on those forms. Hence, there is a check and restraint put upon affinities, to the extent that each line of existence, however weak may be the affinities of its elements, retains a controlling vitality, which in the order of Nature enables it to secure its share of decomposed matter, to flourish, and to maintain its existence. Nor will that existence cease so long as the vitality and other parent, whatever it may be, act together with sufficient matter within reach to make them effective.

We thus determine, by reasoning upon these data, whether absolutely correct or not, that each kingdom in Nature has a certain amount of the matter of this earth set apart for its especial use, and that the decomposition of one portion of it gives material for an analogous form to spring to life, requiring some one or all

of the elements thus liberated: because the dependence of one kingdom upon another, and upon the whole, bears a constant relation to each other; and if any one kingdom should fail to form, that on which it depends would fail also, and so on, till all such existences having mutual dependencies would be brought to an end.

It will, then, be readily seen how this want of existing equilibrium would affect all Nature. The absence of any one kingdom, or the excess of another, would involve the reorganization of natural laws for a new state of things, because new affinities and relations would arise on the withdrawal of even one kingdom. Then how can we use this probable fact to show the falsity of the claimed geologic developments? If the principle be a sound one, the entire range of natural affinities and dependencies must have been changed at every successive introduction of a new kingdom—the formation of every new rock in the mineral kingdom, or an excessive and unnatural growth of the vegetable kingdom.

This goes to show an analogical if not a scientific reason why the world should have started in an equilibrium of existing entities, and that that equilibrium has remained intact to the present day. So, when the ge-

ologist talks of igneous fluidity of matter, or of that state of things claimed as detrital and sediment, which only can be paralleled to a huge mill grinding out a world, where is the first scientific principle regulating matter, the present equilibrium? Or, when he talks of creations which have existed half made with respect to ours—of their destruction, and reorganization anew, with portions of the last—dropping the remainder, and that too without a precedent to offer from which to reason, where is his scientific equilibrium?

The lines of existences of families seem to us to be the warp-threads of creative design; and, as we trace them back in the imagination, we can not determine why, as they now mutually depend upon each other, and weave forward the woof of Nature, they should not have always played alike and in unison to the vast alimantal shuttle of vitality and life. When, too, we know what the shuttle is which bears the filling, the supposition becomes riveted into a fact that, the existing equilibrium proves the necessity of its own vitality during the existence of an organized world.

If, then, it shall be shown that in each of the geologic periods claimed, there were no means of feeding animated nature analogous to that by which the process is now carried on, it is a dead lock to the supposi-

tion that animal or vegetable life existed at all; except, indeed, that the ingenious geologist might assert that in those ages they did not live by absorbing alimantal food, as they do now. This proof, we think, is conclusive, when the manner by which the process is now achieved is explained.

Everything in Nature is consumed in some way by its neighbor; but that consumption accomplished by the vegetable and animal kingdoms is sufficient for our present purposes.

In looking out upon Nature, we often wonder why it should rain, and deplore the existence of unpleasant weather. Though the husbandman knows its value, he scarcely comprehends the reason, except from experience that it is good. He sees that it refreshes and supports vegetation, and thus it becomes a proof to him that in some way the rain administers to the wants of the plants. But the chemist is enabled to show to him what there is in the plant which it absorbs and feeds upon, and hence shows from what sources that food must of necessity be obtained. The next and most natural inquiry follows, "From what storehouse comes this supply?" And here is the whole question respecting the geologic pre-Adamite feeding. Where were the corresponding means which the pretended

pre-Adamite animal and vegetable kingdoms had of procuring food and sustaining life? Let us see:—

Science having determined the well-established facts respecting the kind of food which the vegetable and animal kingdoms draw from the mineral, and also having determined the vehicle by which this food is conveyed to them, namely, the *rain-waters* (which are made effective to this end by the relative *positions* of the rocks with each other, and also by the differences of levels, by reason of one being higher than the others), he looks for the means by which and with which this constant process was carried on in the pre-Adamite world, when it is asserted by geologists that these positions did not at all times exist.

It is found, by the chemical analysis of river-waters, that most of them contain the following substances held in solution, namely:—

Carbonate of Lime;
Carbonate of Magnesia;
Silicate of Magnesia;
Peroxyde of Iron;
Peroxyde of Manganese;
Alumina of Manganese;
Sulphate of Lime;
Sulphate of Magnesia;

Sulphate of Potash ;
Sulphate of Soda ;
Chloride of Sodium ;
Chloride of Potassium ;
Chloride of Calcium ;
Chloride of Magnesium ;
Carbonate of Soda ;
Silicate of Potash ;
Phosphate of Lime ;
Phosphate of Iron ;
Organic Matter ;
Suspended Matter.

We inquire, "Whence come the river-waters?" and the answer is, "From mountains and surfaces more elevated than that point to which they flow." To make our proof complete, the chemical analysis of rain-water before it falls to the earth shows that it contained few if any of the above substances, which demonstrates that, after they fall to the earth, these various compounds must be absorbed by the water. Then, too, it is ascertained that in dry seasons these substances are more sparingly found in the water than in very rainy weather. So the proof is rendered conclusive that the rains are the direct agents and are the vehicles by which these substances are drawn from their resting-

places on the hills, and conveyed downward to the oceans.

In their passage, the fresh-water kingdoms of plants and animals absorb what they require, permitting what the marine plants and animals need, to pass on. Science determines also the causes of the rains to be evaporation; and hence the round process of Nature. Waters of the oceans are evaporated, pass to the atmosphere in vapor; and, as though the Creator had arranged matters about right, notwithstanding the geologist, these mists wander on in the currents above until they come *against an elevation*, or denser current of air which, if either be sufficient to raise the vapor to a height in temperature great enough to condense it. the rain will fall as the inevitable consequence. But should the vapor not be in condition, or the height be insufficient for condensation, it will pass on until it meets a higher and still a higher peak, or denser current of air, till at last the rains will descend—and upon what? Upon the cultivated fields of the husbandman, it is true, but they will also fall, upon the way up-towering, barren, and rugged heights, where none save the Creator would think them either necessary or welcome. What can be their mission in these lonely, uninhabited wastes?

It requires the entire range of the geologic rocks to answer this question, for it is to supply the articles of food which we have before enumerated, to the wanting world below. Each particular layer contains its peculiar necessary, and that necessary *can not be obtained* from any other source. Why, then, the towering mountain, along up the sides of which you can read the names of those storehouses of food piled in regular, nay in a methodical order, the one upon the other, to its very summit? Why are they exposed to the view of the curious geologist, who spies into their composition to draw his inferences? Does the intelligent reader believe they are the result of a shoving up from below by a *mechanical process*, the bare assertion of which would be a disgrace to the first day's work of a stupid apprentice? But if the result be attributable to the power of an omniscient Creator, working for a design, it becomes at once possible, but not by the action of organized forces as they are now established.

These storehouses of food are traversed by seams; are turned up at various angles; are placed here and there, but with a regular succession as to which is highest and which is lowest, and with the separation between them as decided as there is between the animal and man. It will be seen at once that if there

were no mountains arranged in the manner specified, both as to height and composition, how would the rains be condensed? and, if so condensed, what would be the utility of their precipitation, if they had no immediate duty to perform? How would they be enabled to convey to the plants and animals that on which they subsist, if that subsistence was placed beyond the reach of the rains? Hence, to carry forward the feeding processes under our equilibrium, the rains fall upon the mountains and hills, percolate into the fissures, or pass over the surfaces of these storehouses of food which are exposed upon mountain-sides; pick from them, as the bee gathers his honey, that which their affinities command them to do, and joyously dancing, singing, and leaping, with their little burden, down steep, over cliff, and finally debouching into the silver thread which leads to some gigantic river, while it pours a stately stream into the spreading ocean. In each step of the progress of these mountain-sparkling waters on their mission, repeated time and again, they find the eager plants and animals waiting their coming. Their wants are supplied, and the unburdened waters pass on, to be returned again to their work.

Then, assuming this to be the mode of feeding plant and animal life now and by means of these elements,

does it not show that there *was not life* in the pre-Adamite geologic world? For certainly there were neither the mountains nor the completed layers of storehouses of which we have spoken in combination there. Nor were they in the position for the rains to circulate through their seams, because they are claimed to have been horizontal. This must necessarily have been so, if they were merely sedimental. There were no elements in action in the so-called geologic pre-Adamite world which could either now or then compass the present mode of feeding. What, then, must be the inevitable conclusion? Either that the laws of Nature have been changed at different so-claimed geologic periods, respecting the manner of feeding, or that there was no vegetable or animal type to feed. The geologic believer that vegetable and animal life preceded the pre-Adamite fossils may take either horn of the dilemma which suits his purposes best.

All equilibrated chemical science must overthrow the geologic faith on this ground, if on no other. But to some minds, assertion is as good as proof; and it may be well, in this place, to say a few words about earthquakes, upheavals, and volcanoes, to show that the results in nature claimed to have originated in the laws which now govern them in their action are entirely

impossible. Who will deny that there is action upward in the volcano, or disturbance in the earthquake? or who will not say that lava is the result of the first, and sometimes the destruction of cities, the result of the second? But who will say that he has seen a granite or gneiss mountain, or any of the food storehouses we have spoken of, thrown from a volcano. Lava is one thing, granite, gneiss, the primary rocks, and the storehouse rocks are another — yes, quite another. Thunder, the shock from lightning, that may cause a house to tremble, is not an earthquake, which can do more; nor is there any rational analogy which can be drawn from such data, when they have not been known to produce the result in *exactness* which is attributed to them. Volcanoes have been known to throw up limited amounts of lava, and thus accomplished a hill, or mountain, if you please, but its bulk was made of lava, and not of the rocks which we have named.

So earthquakes have been known to throw up limited amounts of earth and rock, but never a mountain-range, or even a respectable hillock. So that the supporter of the geologic faith must admit, that there were better volcanoes, and more powerful earthquakes in the pre-Adamite world than we have in this; hence

we bring him to the point under this head, that the laws of Nature *have been changed* regarding volcanoes and earthquakes, if he assumes this position, of which he can give no proof. But more than this is done, we show thereby that he has no *existing analogies or inferences* from which to reason.

But as the *upheaval* is the result obtained, let us see the mechanical operation which the advocates of the geologic faith presents, as the means by which mountain ranges, with their storehouses of food, originated in the pre-Adamite geologic world.

Mountain ranges are made up of cone-shaped eminences, emulating each other in height, on a given plane, which may be assumed as their base. So far as our experience goes, few, comparatively, bear evidences of volcanic relationship, while all are claimed by the supporters of the geologic faith, as having been ejected upward by a central force, or keeled up from below by some damaging process, to what they denominate the crust of the earth. And when the reader shall know, that at least ten miles of rock would require to be moved to display the granite, he will appreciate the remark. Suppose, for an instant, we are so far anti-biblical as to admit the sedimentary processes to have formed, that the granite lies deep

down below all rocks, and stands, as it truly is, the foundation of the earth—over this is the gneiss—over this the other primary rocks, and then the food storehouses, in their order respectively, and lastly, the soils.

Now we must beg to stretch the imagination of the reader a little, in a familiar parallel, but if we reasoned geologically, we might claim it as *having been, because something else was so.*

Suppose we had a mill-pond as big as an ocean, and we had it filled with water within ten or twelve miles of the top. Just level with the water were knobs of granite mountains in great variety, and in number relatively equal to the heads of stumps seen in an ordinary new-country milldam, where the standing trees have been razed level with the ice. We now desire to make an experiment, and hence we wait till the chills of winter have crystallized over our mill-dam, and the various knobs were just visible above its glassiness. To accomplish our end (having the means), we let into our millpond, and atop of our ice, sufficient water to make five miles of solid ice all over the top of the knobs. When this is solidly congealed, we let on, in succession, what will correspond in depth to each of the so-called sedimentary rocks, till the

whole range is completed in ice representations, and, finally, a light snow falls, which answers in analogy to the soils.

We have thus spread over a sufficiently large basis, so as not to be charged with unfairness on account of its size, and hence, as not being an analogy. Now the mountain knobs, under the ten or fifteen miles of ice, may be supposed a hundred miles apart. With this paraphernalia we wish to illustrate the geologic mode of making a mountain, and hence, we either shall be compelled to shove the knob up through the ice high enough to accomplish the object, or the mountain must be made of the ice. For it matters not to us what the mountain is made of, when we show the assumed manner of its making to be unmechanical and impossible.

To explain how the knob could be shoved up would be the argument of the geologist, while to show how, by any internal power known to us, it could not be shoved up is the dead-lock of their argument. But we can show how the crust can be broken, and hence the knob can be made to appear, resulting in relative altitudes to the general level of mountains, not, however, of the composition of existing mountains, made of the food storehouses of which we have spoken.

Ordinary things appear large when shown on a geologic scale. We now proceed with the experiment, by drawing off the water from this extensive pond, and letting the ice down upon the sides of the knobs. By this process we gain the same result as though the knobs were urged up by the geologic supposition of a central force — and if the result be the same, the geologist may as well take our plan of mountain-making as theirs, for we think it superior in many respects. In theirs of a central outward force they assume what is impossible, while in ours we simply use the existing force of gravity!

Observe the stair-like cracks threading their way outward as the water recedes, and the weight of the superincumbent mass bears upon the summits of those geologic mountains struggling for birth. Those cracks open wider and wider, and the sister surface angle points, gradually lean away from each other, like the members of a distracted and broken family once bound together around a common fireside. The waters still recede, and the members of that united family lean farther and farther from each other, till they rest stationary at reserved distances, looking steadily but sternly on their former home.

The metaphor is past, the ice rests in an inclined

position upon the sides of the knobs, but where are the mountains as claimed geologically. The knob which should be the mountain (the granite proper), stands ten miles below his geological position, and around him stand, ten miles above in a circle, mountain peaks resembling wedges, and each resting on the knob or mountain.

Has ever a phenomenon like this been seen in any of the geologic range of forms? Yet every one conversant with the operation of forces, sees that if the sedimental rocks, so-called, were ever impressed by an under and upward force sufficient to break through ten or even less number of miles of their solidity, these wedge-like mountains would be the result. No horizontal or slightly-inclined order of food storehouses would occur as they are found. But if we should help the geologist out by a horizontal cut, just a little below the summit of the knobs, after the ice had assumed its place, and remove the upper portion of ice, we should have the layers of the ice visible, just as we now have the layers of rocks, as they appear upon the existing granite mountains. It is the great failure, and the prominent trouble in this branch of the subject, that the advocates of the geologic faith can not explain this cutting process, and casting away of these

upper peaks. Nor can we devise any relief for them. Hence we are compelled to say, that the whole line of argument founded on upheavals, is wholly unwarrantable under the action of existing natural laws.

How, then, stands our argument in favor of the biblical Christian faith, as superior to, and as in deadlock conflict with the geologic, as to the origin of the pre-Adamite fossils — whether they were made by a creative fiat, or whether they were preceded by vegetable and animal life?

For the purpose, then, of making the geologic faith good on this point, geologists are compelled to violate all analogies as to the creation of heads of lines of existences by a creative fiat.

First. Because those geologists whom we wish to answer, admit and make necessary, creative fiats, not only to heads of lines of existences, but to entire operative creations.

Second. They admit creative fiats to analogous and homologous existences with the fossil mineral.

Third. They admit creative fiats to elements, while they deny that origin to the completed forms which are composed of them.

Fourth. They admit creative fiats to the existing creation, except the pre-Adamite fossils and their de-

pendencies, the latter, only, being excluded from the rule by the former supposition.

Fifth. In summing up the number of lines of existences admitted as of fiat origin, they are counted by thousands, while the fossil, which govern its dependencies, may be counted as one. For, if the creative fiat be admitted to one fossil, all pre-Adamite fossils, by analogy, take rank with it.

Sixth. As reasoning from inference respecting the origin of the pre-Adamite fossils, they utterly fail as logic, from want of the foregoing analogies. And as reasoning by analogy, their reasons fail by virtue of the terrific odds in analogies against them.

Seventh. The inferences and analogies are unsound, when argued from, because they do not furnish *exact* parallels.

Eighth. As a deduction in science, that pre-Adamite fossils were preceded by vegetable and animal life, or that any given fossil was pre-Adamite, are both mistakes, and are untrue as scientific deductions. For, from the nature of things, *no proof can be made upon either point.*

Ninth. Hence, whatever grounds a geologist may imagine he sees in the rocks to show either supposition, they are simply the foundation of a FAITH.

To satisfy this ONE exception to creative fiat, this geologic faith requires :—

1. An impossible condition of matter in an igneous fluidity, a state without precedent.

2. A violation of known natural laws, as to the ability of matter to exist together in an igneous fluid mass.

3. The waste of creative energy in evolving a useless amount of heat, to destroy rather than make.

4. Two contradictory modes of making mountains, the one by the corrugated wrinkling process, brought about by cooling the igneous mass, and the other by upheavals.

5. The impossible mechanical theory of detrital and water-wear.

6. The abrogation, in accounting for such supposed results (the sedimentary rocks), of a well-established law, that like causes produce like results.

7. The unexplained placement of the jewels in the so-called sedimentary rocks.

8. The unexplained placement therein of the metallic kingdom and their compounds.

9. The impossibility of the upshooting of fluid masses from an igneous central mass, because it contradicts the well-known principle of the hydraulic press.

10. Hence, the unexplained mode in which most of the traps and basaltic dykes were made, if not by creative fiats.

11. The unexplained undulated condition of the soils upon the present rock formation, if from detrital and sediment.

12. The waste of creative energy to make, destroy, and re-make and re-destroy, to produce the final result first aimed at, in order to make *one* single exception to the rule of creative fiats, that of the fossil mineral.

13. The failure of all inferential and analogical reasonings on exact data.

14. The failure of all analogical reasonings as to creative fiats. And,

15. The total destruction of the foundation of the biblical Christian faith.

Now let us see the ground upon which the power is delegated to this fossil god of stone. We cast our eyes abroad upon the three great divisions of matter, the mineral, the vegetable, and the animal kingdoms, as they existed at the end of the sixth Mosaic day, and we denote them by a figure, as represented on page 107.

By this diagram we represent the starting points of all the lines of existences in the Mosaic creation, which

are, or have been, *reproduced* by any law of Nature. In the mineral kingdom, it is believed, there are many which are not the subjects of the creative reproductive will, and hence may well be regarded as the foundations of the earth, upon which the reproductive functions are developed.

In the vegetable as well as in the animal kingdom, it is believed, though it is not proved, that very many lines of existence have ceased to be reproduced. This fact seems nearly established, if geologic evidence shall be taken as conclusive.

It may be possible, if this be true, that the total amount of matter at first devoted to the vegetable and animal kingdoms, may now, in the great equilibrium, be absorbed in a line becoming more abundant, while another has passed out. So far as the analogy extends to the mineral kingdom, it may be equally true in it, but we have no evidence to show that a mineral form, although in the Mosaic creation, and which may have been sparingly, or not at all, reproduced, will not, in the course of time, follow its pattern and produce a post-Adamite form.

Looking then at our figure, and at the various lines of existences, as they were in the Mosaic sixth day, we first find a clay slate, and ask ourselves at once,

can a clay slate be now formed, and by what process? Geologists, who pretend to be skilled in this science, say that it can, and hence we assume the thing to be true, that clay slates can be re-formed, and from parents, like any other thing. Hence we place it down as a line of existence which reaches from the Mosaic account to 1860. Next we ask of the families of limestones and receive the same answer; of the varieties of sandstones and receive the same answer; and of the conglomerates and the same answer still; and so we go through with each and every line of existence in the mineral kingdom which is reproduced, and set down all of them as lines of reproduced existences. Now it matters not whether it be a lump of limestone as large as a marble, or the size of a mountain, it belongs and must be ranked under the appropriate membership of the family of limestones. We, in like manner, go through with the members of the vegetable and animal kingdoms, where parentage is more visible, but not a whit more certain, than that in the mineral. In the vegetable it is mostly traced to the seed, but vegetable vitality can gain matter through other processes, well known to the botanist. The reproduction in the animal kingdom is done by quite a differing process. And from these

remarks, we may venture an assertion, that every line of existence has a *different set of parents*. The *vitality proper*, which enables it to gain its share of food, and some *previous condition of matter*, to make that vitality effective, constitute the two parents.

Then let us run our eye through the members of the mineral kingdom, and what do we see? A crystalline form—it may be of quartz. See the lapidarian accuracy—alas! greater than that, *perfection* in its angles and forms. See, too, the five brother-varieties of the quartz-crystal. Do they look enough like brothers in form to be such? No one would suspect them to be of common parents, nor are they. They may be of the same composition, as one animal is like another; but the composition does not govern parentage. There is a deeper law than that which controls all results—the law of form, springing in different parentages.

But the crystal, the limestone, and the sandstone, can be reproduced by their parents, as well as the members of the vegetable and animal kingdoms can by theirs. We have but to find out by experience *what that parent is*, on the one side and the other, and their union will be productive, if food can be obtained; and the resulting form will be governed by its predecessor of like parentage.

In searching among these masses of crystals, metals, minerals, and soils, we find a wondrous odd-looking piece of limestone, or mineral, or quartz formation, which resembles an animal or a plant, and yet is not either (the fossil). How came this strange thing here, and where shall we arrange it in the lines of existence to which we have referred, in the mineral kingdom? It is limestone, and yet does not seem to be of the same origin as the other limestones; or it is quartz, and in its out-of-the-way place tells no consistent tale; or it is of metal, and seems still stranger: and we know not where to put it in the relative position regarding lines of existences, as we do the others.

Let us examine principles, and see where it will demand a place. Has the thing parents, or is it without parents? Will the thing grow, or will it not grow? Will it perish, or is it measurably imperishable, like most mineral forms? Is the thing a member of the mineral kingdom, or is it not?

As to the first question, "Has it parents, or has it not?" this can be determined by experience. Try the test: take a plant or an animal, or portions of either, and when the distinctive parent (*vitality*) of either has abandoned its material to dissolution, place that material where petrifying vitality may seize upon that void

in Nature to establish a new empire, and let that vitality have proximity to food, and what will be the result? A new existence—a fossil, as we call it; and, when completed, its vitality, like all other completed mineral vitalities, will cease to act, and a form complete as that of man will repose in its native or passive state, enjoying for aught we know as sweet an existence as any other fair form of God. Yes, and however much some vain men may vaunt themselves of knowledge, it asserts its position and rank in the mineral kingdom, with its parents, its quantum of matter set apart by Almighty Wisdom for its maintenance, its measurably imperishable form, and its unchangeable relations to the vegetable and animal kingdoms, with a force, a strength, and clearness of undeniable truth, that claims for it a distinctive rank as a line of existence not to be overlooked by the heretic, the atheist, or the infidel.

Nor can each line of memberships of this mysterious kingdom be crowded out of its legitimate place in the Mosaic creation sooner than any favorite or more ostentatious and apparently more important existence be torn from the fiat law of the Creator. Let him who takes the scalpel and incautiously handles it around the established laws of God, take good heed. We care not how great the man; we care not how wide his worldly

glory ; we care not what his scientific reputation—the greater each may be, the greater should be the heed. It is time for the Christian pure to know who thus will take the responsibility of using that scalpel, either on the Sacred Scriptures or in the laws of Nature. Stay not behind, if you would willingly join in the coming conflict between the two faiths. Right or wrong, let the geologist, who endeavors to reconcile the biblical Christian faith with his pre-Adamite development, display his ensigns openly and fairly, and his fellow-men will respect his independence, although they may deplore his errors. But let him not fight with the colors of his enemy streaming from his fossil standard, or waving over his long lines of battle array !

CHAPTER XI.

GENERAL CONFLICTS OF GEOLOGIC AND BIBLICAL CHRISTIAN
FAITH.

As a necessity, we are now brought down to that concluding part of our argument, which relates to the vital principle underlying the whole subject. The geologist who claims himself alike to be a reconcilist—endeavoring to prove, philologically or by natural theology, that his faith is identical with the biblical Christian faith—assumes a position at once interesting if not alarming to those who look for truth in the words of the prophets and the apostles.

Scarcely one of the sacred writers fails, incidentally or pointedly, to refer to the creation, in some one of its elements, as bearing directly or indirectly upon the subject-matter of which they treat. Even the Saviour refers directly to the subject of the creation of man, the most important part of that great event; and the whole weight of his teachings goes to illustrate his

mission as based on this Mosaic fact. When the geologist declares to the biblical Christian that the geologic faith supports Scripture, and at best only requires to this end the patching up of Genesis, he either does not know how far the creation is sprinkled into every page of the Bible, or else he does not understand the difference between contradiction and coincidence. There are those who, in this connection, claim that the Bible is a book of spiritual teachings, of allegories, and of parables; and hence that all matters of science should be excluded from it, and that the Sacred Word is not to be held responsible for assertions of this kind, because of these three classes of statements which it is said to contain.

If our faith and religion be not based upon facts, this position and these views of the Scripture might be true. But the reflecting mind will see that facts, both natural and revealed, are stated in almost every line of Scripture; and it would truly be as startling as any other portion of the geologic faith to assume these facts to be fictions. It is just this sort of flabby reasoning which has induced many to cast aside the Mosaic account of the creation by fiat, and assume that of the geologic, by development. And, as we have seen, the grounds of this rejection and assumption are

not based in the *proof* of facts, but in the rejection of facts and the assumption of a fallacy.

We must, then, assume the scriptural statement as true, that God made all entities in six natural days; and that the object of such making was, the establishment of man as the delegated divinity to exercise the subordinate control over all. This is the golden thread which is woven through all Scripture, and is manifested threadbare in the New Testament, the second foundation-stone in the biblical Christian faith.

Divine wisdom is human wisdom infinitely amplified; and when we apply human wisdom to constructions on earth, it is the unit by which Divine wisdom in like things can be measured. Though the subject be infinite, it has still its finite unit of measure.

A familiar example can be drawn from every-day life. If you had an edifice to build, and possessed Divine power, how would you proceed?—or, rather, with your knowledge of things and the operation of natural laws, what would you do first? Would it be worldly wisdom to make the whole instantaneously, in one continuous, unbroken, and jointless and seamless mass, when each part was to perform an independent action, and where of necessity you must have doors, windows, and other shifting and moving agents? Would it be

worldly wisdom to construct the roof first, or to make the foundation first?

Would it not be worldly wisdom to make the parts of the building first? Then examine them, and see that they were good for the purposes intended; set up the framework, and cover, and finish to completion? This is a plain proposition, and can be only varied on the supposition that man, possessed the power of Divinity to fiat it into existence.

But, as man does not possess the fiat power, and his abilities are limited to combinations of elements already made, he is compelled to accumulate power by time, in order to accomplish that which he would do in less time if he possessed omniscience.

Would any geologist, if he had this same edifice to build, labor at it through years of toil and anxiety, if he possessed the power to do in a day, what many laboring men would require years to accomplish? Further than this, would he make his beams, rafters, braces, and posts, put them together imperfectly, and then destroy them, in order to build up a new and a better structure, even before the first was worn? Still further, would he do this again and again, as the child overturns his cobhouse for amusement, till at last a structure should arise fitting his first design, and ac-

completing only what he might have done at first and at once?

If wisdom be an attribute of the Creator, it is difficult to understand how wise men can call the geologic course of creation anything but folly. Endless years of Divine effort, exerted to add, fraction by fraction, to the vast rock-formations of the earth, to accomplish that which his omniscience could and did accomplish in a day! It may be wisdom, and it may be that kind of human wisdom which guides the geologic mind to call such a wild, fanciful, law-violating, creation-destructive, granite-mothering course, that which guided Creative Wisdom in the making of this earth. If that be wisdom, human folly may soon be at a premium, and be sought for as the pure coin of truth.

Hence, to deny God's fiat creations upon this principle, is laying a grave and serious charge at his wisdom; and that wisdom being an element of the Christian faith, such a charge strikes at the very foundation of the biblical declaration on this point contained in Genesis, and repeated in the fourth commandment, and substantially reiterated throughout the Scriptures.

That intellect must be obtuse indeed which seriously avers that the course of creation, elaborated by the geologic faith through chiliads of years, is equiva-

lent to, or is not in dead-lock antagonism to the scriptural fact, as stated to have been done in six days. It is no less than a burlesque upon language and common sense for any one to assert the shadow of a coincidence between the two. We have seen wherein they conflict in all the elements which make up each; and, as a summary and review, we will restate them here:—

First. The overshadowing conflict between the geologic and biblical Christian faith as to the time consumed by Creative Wisdom in making this earth; the one asserting that the time was greater than six days, while the other asserts that it *was* performed in six days.

Second. As an element of a creation, the supporters of the geologic faith contend that, in its course, matter assumed the igneous fluid condition, and that this was necessary to consummate creation. No such assertion or reference is made in the biblical record. Was this condition fated?

Third. They claim a heating and cooling process as the creator of certain mountainous and other forms, while the Scriptures attribute their making to our God.

Fourth. They claim that earth (dry land), water, air, and light, were made, and in action, myriads of years

before the sixth Mosaic day, while the Scriptures declare that they were made within the six Mosaic days.

Fifth. They claim that animal life preceded the introduction of the existing vegetable kingdom, while the Scriptures assert, that animal life was introduced after the existing vegetable kingdom.

Sixth. They claim that the existing entities, in a large portion of the mineral kingdom, came from the granite rock, through myriads of years, while the Scriptures state they came from God in one day.

Seventh. They claim that many vegetable kingdoms had been created before the Mosaic, and been destroyed, while the Scriptures claim only one vegetable kingdom has been made, and neither it or any other has been destroyed.

Eighth. They claim that God has created kingdoms of animals at various times, in geologic ages, and destroyed them, while the Scriptures assert, that animals were made in two days.

Ninth. They claim the combined action of various vegetable and animal kingdoms, at distant and different geologic periods from each other, while the Scriptures assert but the existing two.

Tenth. They claim diurnal motion, for establishing days, years, and seasons, began chiliads of ages before

the time so stated to be in the fourth day of the Mosaic account.

Eleventh. They claim there have been an indefinite number of *lights*, or days, consumed in the making of the earth as it is, at best, more than six days, while the Scriptures positively assert the work to have been performed in six days.

Twelfth. They claim, as the controlling element in the geologic creation, that the sun, moon, and stars were made, and in action, myriads of years before the Mosaic date, while it states that they were first put in action on the fourth Mosaic day.

Thirteenth. They claim and state, that rain fell upon the earth before the date of the first Mosaic day, while the Scriptures declare that it had not then rained upon the earth.

It is useless to prolong the list of conflicts further. A mind that can not see them through this transparency must return to its letters.

It will be urged by many, that the destruction of the Mosaic account of creation and the fourth commandment does not effect the Christian faith, nor will it be affected whether the pre-Adamite fossils, be bound to the law of fiat origin, or whether they be attributed to development.

The Christian faith is a myth, unless the biblical history, which records its origin, rise, and the duties it incurs, is true. The record commences in ADAM, and runs in a connected revelation to CHRIST.... Every word and line through the book illustrates co-ordinate truths, bearing directly upon this line, and the whole of the New Testament is the illustration of the worldly history of the Saviour and his teachings, whose life was the summing-up of biblical character, gathered from the first line of Genesis to the last of Revelation.

If the geologist shall satisfy himself that the pre-Adamite world was developed, instead of fiated, into existence, *he* wipes out the Mosaic account, and the fourth commandment, and most of the Scriptures. Suppose, then, to-morrow another ism or ology starts up and wipes out the Pentateuch, and, as a consequence, the remaining commandments. And next year still another, and wipes out the balance of the Old Testament; while in a year or so more another shows itself, and aims to prove the New Testament a huge folly! What is to be done or said? Has not the latter as good right to assume his theory as the geologist, who commences at the other end of the Bible?

The Mussulman looks to his Koran as the ground

of his faith, and a material change in it would readily be admitted as the destruction of the most cherished feature of his religion. If the geologist be permitted to eliminate portions of the Bible, because his faith is strong in the origin of the fossil, may we not reasonably expect other changes soon?

No, we urge the intact condition of the Bible as a whole, and its support, from two considerations, those of duty and policy. From duty, because there is Christian instruction from the beginning to the end of it, and the Christian faith bears with equal pressure, and has an equal support on the whole. If we consent to the principle of change, it will be admitted by any geologist, that neither he or the strict-constructionist can draw the line at which that innovation shall cease.

As a matter of policy, the structure and maintenance of governments depend mainly on the force of Christianity, and the Bible is the great prop which directly supports the political welfare of communities. It should, then, be the duty, as well as the policy, of every good wisher of the human race, to urge the truth of the Bible in all matters of faith. The geologist, who founds his opposition to it in the points referred to, being based alone in FAITH, should, as a

Christian and good citizen, who wishes the greatest benefit to the masses, urge the maintenance of the Bible instead of its destruction.

And now it is not for us to teach those whose duty it is to teach us. But there are mutual dependencies in life; none are quite independent of the remainder; nor is knowledge concentrated, as of right, in any one corner of the earth, or in any one class of individuals. The wise bee can gather honey where the sluggard can not see it; and however humble the flower appears, it may, on being nursed, give forth some fragrance.

It would truly be a Quixotic undertaking for the upholders of the Christian faith, to sally forth and contend with every *ism* which floats upon the idiosyncracies of the human mind. It requires as much judgment to know what to attack, as how to combat any. But it seems to us a plain case, and hence, a plain duty, to accept the challenge presented by the promulgation of the geologic faith as the rival of the Christian faith, and boldly and fearlessly speak for the maintenance of the one and the rejection of the other.

There could be no worse book put into the hand of a child, who was to be educated to believe in the Bible generally, or particularly in the fourth commandment and our creed, than that one which would bend his

mind to the belief, that all these points of faith were *untrue*. Still more when the child, from necessity, must be educated in the *science*, and yet must reject the *faith* of geology. If no one will teach him the difference, it is plain to see he will accept both upon the same footing.

To illustrate, too, the effect of teaching on this point. We were once endeavoring to show (to a very tender intellect, and yet a most devout Christian) the conflicts of the two faiths, and the pernicious influences which resulted, particularly to the young, as candidates for the acceptance of the true biblical Christian faith, by adopting the geologic *manner* and *time* of making the earth, and to prove how essential it was for every Christian to understand the principles of fiat law, when said she in return: "Why do you oppose geology with such amazing strength and determination? My minister has never said ought to us about its iniquitous bearings; and I am sure, if he had found, in his studies, that it was anti-Christian, as you say it is, he would have denounced it in unmeasured terms."

This answer is a volume in itself, and was enough for us, and the conversation ended abruptly. In that answer, although simple, is a sermon from the untaught to the teacher, which may measurably explain the

cause of the sudden rise into very general acceptance of those wide-spread infidel principles : because —

First. The lady referred to had never heard from her spiritual teacher, that there was any difference between Geology, as a collection of natural facts, and the faith as to the origin of those facts in the hand of the Creator.

Second. She had assumed the silence of her minister as his approval of the geologic faith.

It must be apparent to all, that the unaided efforts of a few straggling writers, even though they spend their lives, and devote their money and energies to this one object, will fall like a raindrop upon the waste and hungry sands of the desert. Nor will a scout here and there sent out against the heavy entrenchments of the geologists prove more effective, or will discomfort them less in their present security.

We, then, reject the geologic faith, as to the *manner* and *time* of creation.

First. Because that manner and time is widely different from that which is stated in the biblical account of the same event. The one is claimed as having been accomplished in an indefinitely great number of years before the date of the Mosaic creation, and by *development*, instead of by *fiat law*.

Second. The advocates of the geologic faith *can not prove* that any particular fossil was pre-Adamite.

Third. They *can not prove*, even admitting any one fossil to have been pre-Adamite, that it was preceded by life, either vegetable or animal.

Fourth. They *can not show* that the fossil kingdom is an exception to fiat law in its archetypes.

Fifth. They *can not show* that every geologic period does not contain the entire range of forms in the fossil kingdom.

Sixth. They *can not show* that *every* plant and animal represented by a fossil, either fragmentary or otherwise, has not lived in, and since the Mosaic creation.

Seventh. They *can not show* that such plant or animal does not *now* live in some portions of the earth.

Let us ask those, then, who feel an interest in the maintenance of the true Biblical Christian faith, to look well to their means of defence. There is a conflict in the future, or the signs of the times deceive us widely, which will be waged on the one side by infidelity, with weapons made by the Almighty himself. These weapons are of no mean order, nor are they difficult to be handled by raw recruits. While those which are reserved for the Christian are of a character at once naturally repulsive to the soldier, and only

effective in the hands of long-trained, long-tried, and skilful veterans.

The man who holds to the doctrine, or the supposition, that the Biblical Christian faith, in its purity and unity, has not been actually surrendered by — we dare not say how many of the world — and is yielding in every avenue of life, daily, to the geologic faith, knows little of the undercurrent which sways the public mind. This comes, in our view, from a want of education upon the points at issue, wrongly certified as science. And while these certificates are issued by infidel teachers, apparently equally ignorant, that ignorance, in the main, is only to be eradicated by other teachings — “Line upon line, precept upon precept, here a little and there a little.”

This ignorance has been, and is still, a towering avalanche of infidelity upon the Scriptures, but we entertain the hope that a little light, well concentrated, will melt those triumphantly-dancing white feathers into bitter tears of remorse.

Then, instead of deprecating, let all Christians extol the geologist's infidel fossil god. Throw light about his birth, his life, and his way in Nature. Do not shun him, but cling to him as man clings to life. Set him up in the high-ways and by-ways, and insist that he is

